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ABSTRACT

This competency-based horticulture curriculum guide is designed to provide secondary and postsecondary horticulture teachers with a task-oriented program in gardening/groundskeeping. It contains a master resource list, a listing of gardening/groundskeeping resources available from various states, and 87 competency task sheets organized into 10 competency areas. These areas are equipment operation and maintenance: equipment and supplies: soils: fertilizers: lawns: trees, shrubs, annuals, and perennials: pesticides: maintenance of facilities: management/job actions: and personnel management. A task statement, a performance objective, suggested learning activities, evaluation procedures, selected resources, and a performance guide are provided in each competency task sheet. Instructor check lists designed to help instructors determine acceptable levels of student performance are also included in the units. (Related competency-based horticulture curriculum guides in the areas of floriculture and turfgrass maintenance are available separately through ERIC--see note.) (MN)

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CE 029 326

ED203166

Competency-Based Horticulture: Gardening—Groundskeeping

Susan E. Bates
Project Director

Department of
Ornamental Horticulture
College of DuPage
Glen Ellyn, Illinois

Illinois State Board of Education

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Chairman

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State Superintendent
of Education

Adult, Vocational and Technical Education

Research and
Development Section

June, 1981

U S DEPARTMENT OF HEALTH,
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FOREWORD

The Illinois State Board of Education is committed to assisting local communities in the development of quality instructional programs to prepare persons for occupations in Ornamental Horticulture. This 'Competency-Based Horticulture: Gardening-Groundskeeping' curriculum guide is designed to provide the secondary and post-secondary horticulture teacher with a task oriented program in Gardening-Groundskeeping. It is one in a series of three guides which includes Floriculture and Turfgrass Maintenance Worker. Each competency-based guide includes a variety of enabling activities, resources and evaluation strategies so that teachers may choose those which best serve their teaching methods and their students' learning styles.

This guide was developed using a process which includes validation of the Vocational-Technical Education Consortium of States (V-TECS) tasks by members of the Illinois Horticulture Industry. These tasks were validated and revised to reflect job duties performed in Gardening-Groundskeeping occupations in Illinois. Teaching and evaluation strategies and resources were then identified for each task. The guide was field tested in nine Illinois schools and critiqued by other Illinois horticulture teachers.

Sincere appreciation is extended to all horticulture industry and teaching personnel who assisted in the development of this curriculum guide. Recognition is given to the following individuals for their outstanding contribution: Ms. Susan E. Bates, Project Director; Dr. Robert G. Huntley, Initial Project Director, Mr. Jesse Felix, Advisory Council Member; Mr. David James, Advisory Council Member; Mr. Timothy Kelly, Advisory Council Member; Mr. Harry Lavero, Advisory Council Member; Ms. Cathy Martin, Advisory Council Member; Mr. Philip Brown, Field Test Teacher; Ms. Alice Dries, Field Test Teacher; Mr. Robert Mills, Field Test Teacher; Mr. James Morrison, Field Test Teacher; Mr. Samuel Ochs, Field Test Teacher; Ms. Amy Swigart, Field Test Teacher; Mr. Dennis Toren, Field Test Teacher.

Donald G. Gill

Donald G. Gill
State Superintendent of Education

Illinois State Board of Education

Department of Adult, Vocational and Technical Education
Research and Development Section

Product Abstract

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2. Date material was completed June 30, 1981

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Address College of DuPage, Glen Ellyn, Illinois Zip Code 60137

6. Developed pursuant to Contract Number 1) R-33-21-D-0542-317 2) R-33-10-X-0442-317

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____ 03 Business and Office Education
____ 04 Distributive Education
____ 07 Health Occupations Education
____ 09 Home Economics Education
____ 10 Industrial Art Education
____ 16 Technical Education
____ 17 Trade and Industrial Education
____ 22 Cooperative Education
____ Career Education
____ Other (Specify) ____

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X Post-Secondary
____ Administrator (Pre-Service)
____ 7-8
____ Adult
X 9-10
____ Teacher (Pre-service)
____ Other (Specify) ____
X 11-12

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____ Guidance Staff
____ Local Administrator
____ State Personnel

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(217) 782-4620

16. General Description (State the general objective and suggested method of use. Summarize the content and tell how it is organized. Continue on back of this sheet or on another sheet, if necessary.):

A competency-based guide developed for use by secondary/post-secondary Ornamental Horticulture instructors who wish to teach their students gardening-groundskeeping as it applies to the Illinois gardening-groundskeeping industry.

17. Person Completing this Abstract: Susan E. Bates

Full Address:
Ornamental Horticulture Department
College of DuPage
Glen Ellyn, Illinois Zip 60137

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Books:

Beard, James B. *How to Have a Beautiful Lawn*. Kansas City, Missouri: Intertec Publishing, Inc., 1975.

Beard, James B. *Turfgrass: Science and Culture*. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1973

Conover, Hervert S. *Grounds Maintenance Handbook*.

Everett, T.H. *Lawns and Landscaping*. New York, New York: Grosset and Dunlap, 1975.

Hansen, A.A. and Juska, F.V., Eds. *Turfgrass Science*. Madison, Wisconsin: American Society of Agronomy, Inc., 1969.

Hathaway, Louis. *Fundamentals of Machine Operation: Preventive Maintenance*. Moline, Illinois: John Deere and Company, 1973.

Mathews, William H. *Soils*. New York, New York: Franklin Watts, 1970.

Monsanto Herbicide Book. St. Louis, Missouri: Agricultural Division, Monsanto Company, 1974.

Pirone, Pascal P. *Diseases and Pests of Ornamental Plants*. New York, University Press, Inc., 1972.

Pirone, Pascal P. *Tree Maintenance*. New York, New York: Oxford University Press, Inc., 1972.

Rader, Thomas, Ed. *Fundamentals of Service: Engines*. Moline, Illinois: John Deere and Company, 1972.

Rader, Thomas, *Fundamentals of Service: Mowing and Spraying Equipment*. Moline, Illinois: John Deere and Company, 1974.

Sprage, Howard. *Turf Management Handbook*. Danville, Illinois: The Interstate Printers and Publishers, Inc., 1976.

Wise. The Lawn Book.

Bulletins and Pamphlets:

U.S. Department of Agriculture
Washington, D.C.

USDA Bulletin HG123. Lawn Weed Control with Herbicides. 1971
USDA Bulletin 192. Transplanting Ornamental Trees & Shrubs, 1972

Bulletins and Pamphlets (cont.)

USDA Bulletin G-51. Better Lawns, Establishment, Maintenance, Renovation, Lawn Problems, Grasses. 1971
USDA Bulletin G-89. Selecting Fertilizers for Lawns and Gardens, 1971.

Superintendent of Documents
U.S. Government Printing Office
Washington, D.C.

Home and Garden Bulletin 165. Pruning Ornamental Shrubs and Vines, 1969

Home and Garden Bulletin 83. Pruning Shade Trees and Repairing their Injuries, 1969

USDA Bulletin G-151. Spring Flowering Bulbs, 1971.

Brooklyn Botanic Garden
Brooklyn, New York

Soils

John Deere Distribution Service Center
Dept. FF/TIE
1400 - 3rd Avenue
Moline, ILLinois 61265

Mowing and Spraying Equipment

Films & Filmstrips:

The Farm Film Foundation
Suite 424 - Southern Building
1425 H Street, N.W.
Washington, D.C. 20005

"Lawn Mower Safety"
"Precision Liquid Fertilization"
"Positive Placement of Fertilizer"

Associated Films, Inc.
600 Grand Avenue
Ridgefield, New Jersey 07667

"Turf Care"

National Plant Food Institute
1700 K. St., N.W.
Washington, D.C. 20006

"Beautiful Lawns"

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GARDENING-GROUNDSKEEPING RESOURCES - ILLINOIS

Available from:

Vocational Agricultural Service
College of Agriculture
University of Illinois
434 Mumford Hall
Urbana, Illinois 61801

SLIDEFILMS AND SLIDESETS:

No.	
498	Using Power Lawn Mowers Safely
601	Garden Flowers - Annuals, Pt. 1
601(supp)	Practice Set for Garden Flowers, Pt. 1
602	Garden Flowers - Annuals, Pt. 2
602(supp)	Practice Set for Garden Flowers, Pt. 2
604	Diseases of Garden Flowers
615	Objectives of Pruning
616	Selecting Trees for Landscape Use
627	Planting, Protecting Existing Features, Drainage and Driveways
628	Walks, Steps, Retaining Walls
629	Fencing, Patios
630	Mounds and Boulders, Statuary, Lighting
631	Structures, Seating, Play Areas, Containers
632	Water Features, Irrigation, Materials
636	Tree Identification
640	Fertilizing and Watering Shade and Ornamental Trees
641-1.1	Mechanical Digging of Trees and Shrubs
641-1.2	Hand Digging of Trees and Shrubs
643	Pruning Evergreens
644	Pruning Deciduous Shrubs
645	Pruning Flowering Trees
646	Groundcovers and Their Uses
650	Lawn Weeds - Identification and Control
651	Steps to a Better Lawn

GARDENING-GROUNDSKEEPING RESOURCES - ILLINOIS con't.

SLIDEFILMS AND SLIDESETS con't.:

No.	
652	Identifying Illinois Turfgrasses
653	Seed Structure and Identification of Cool Season Grasses
660	Recognizing Small Shrubs
660(supp)	Practice Set for Recognizing Small Shrubs
660-1.2	Recognizing Small Shrubs, Pt. 2
661	Recognizing Medium Size Shrubs
661(supp)	Practice Set for Recognizing Medium Size Shrubs
662	Recognizing Large Shrubs and Small Tree
662(supp)	Practice Set for Recognizing Large Shrubs and Small Trees
662-1.2	Recognizing Large Shrubs, Pt. 2
681	Selecting Container Evergreens, Pt.1
681(supp)	Practice Set for Selecting Container Evergreens, Pt.1
682	Practice Set for Selecting Container Evergreens, Pt.2
683	Selecting Container Evergreens, Pt.3
683(supp)	Practice Set for Selecting Container Evergreens, Pt.3
708	Soil Color
791a	Weed Identification
791a(supp)	Practice Set Weed Identification
800	Identification of Weed Seedlings - Broadleaves, Pt.1
801	Identification of Weed Seedlings - Broadleaves, Pt.2
803	Identification of Weed Seedlings - Grasses
811	The Wicked World of Weeds
1106	Plant Nutrients in the Environment
1107	Air Pollution Damage to Vegetation
1108-1.1	Understanding and Safe Use of Pesticides
1108-1.2	Selecting and Handling Pesticides
1108-1.3	Calibrating and Applying Pesticides Safely
1108-2.2	Identifying Common Insect Pests

GARDENING-GROUNDSKEEPING RESOURCES - ILLINOIS con't.

SUBJECT-MATTER UNITS:

No.	
3022	Safety in the Agricultural Mechanics Shop
3040	Preventing Tractor Overturns
3044	Color Code for Shop Safety
4001	Collecting and Preparing Soil Samples
4002a	pH Test for Soil Acidity
4003b	Testing Soils for Phosphorus
4004b	Determining Available Potassium in Soils
4005	Nature of Soil Acidity and Major Plant Nutrients
4006a	Soil Liming - A Key to Better Farming
4008a	Recommended Potassium Fertilizers
4010a	Planning A Fertilizer Program
4011a	Hunger Signs in Crops
4028	Soil Structure
4029	Soil Color
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4052	Understanding Soils
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5016	Identifying and Controlling Lawn Insects
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6003	Human Relations in Agricultural Businesses
6004	Agricultural Business Procedures
6006	Simplifying Work in an Agricultural Business
6015	Using Arithmetic in Agriculture
6016	Motivating Workers in an Agricultural Business

TRANSPARENCIES AND STUDY GUIDES:

How Herbicides Work
Soil Science
Soil Testing and Fertility
Weed Control
Safe Use of Pesticides
Tractor Safety

Available from:

Vocational Education Productions
California Polytechnic State University
San Luis Obispo, California 93407

SLIDESETS:

Insect Identification Learning Kit

MANUALS:

Agricultural Chemical Safety
Insect Identification Manual
Small Gasoline Engines
Landscape Construction
Landscaping Maintenance

FILMSTRIPS:

Controlling Pests of Ornamental Plants
Elements of Pruning
Fertilizing Ornamental Plants
Lawns and Ground Covers
Introduction to Irrigation
Irrigation, Pt.1: Survey of Methods
Irrigation, Pt.2: Choosing a Method

GARDENING-GROUNDSKEEPING RESOURCES - GEORGIA

Available from:

The University of Georgia
Cooperative Extension Service
Athens, GA 30602

SLIDESETS:

No.	
28	Lawn Grass Maintenance
30	Pruning Shrubs
332	Ground Covers
334	Pruning Shade Trees
350	Maintaining Ornamentals
356	Fertilizing Ornamentals
357	Mulching Ornamentals

LEAFLETS AND BULLETINS:

No.	
16	Brown Patch and Dollar Spot Diseases of Lawns and Turf
21	Lace Bugs
22	Bagworms & Their Control
46	Control of Some Common Pests of Ornamental Plants
96	Weed Control in Lawns
153	Diseases of Groundcover Plants
207	Pruning Overgrown Shrubs
628	Pruning Shade Trees
678	Weed Control in Lawns

Available from:

The University of Georgia
Department of Agricultural Education
630 Aderhold Hall
Athens, GA 30602

Fertilizing Ornamental Shrubs & Trees
Pruning Ornamental Shrubs & Trees
Insects of Flowers and Ornamentals

Available from:

AAVIM
Engineering Center
Athens, GA 30602

Operating Tractors for Groundskeeping and Ornamental Horticulture
Applying Pesticides
Planning for an Irrigation System

Available from:

University of Idaho
Moscow, Idaho 83843

Pesticides for Plant Disease Control - by Harry Fenwick

GARDENING-GROUNDSKEEPING RESOURCES - KENTUCKY

Available from:

Competency-Based Vocational Education Unit
2008 Capital Plaza Tower
Frankfort, KY 40601
Attention: Donna G. Brown

MODULES

No.	
GG-00	Introduction to Gardener-Groundskeeper
GG-1	Taking Soil Samples
GG-2	Developing Fertilization Schedules
GG-3	Preparing and Applying a Compost
GG-4	Converting Subsoil to Topsoil
GG-5	Hauling and Spreading Topsoil
GG-6	Sterilizing Soil
GG-7	Preventing and/or Controlling Water Erosion
GG-8	Preparing a Lawn Seedbed
GG-9	Applying Fertilizer
GG-10	Cleaning and Lubricating Fertilizer Applicators
GG-11	Sowing Lawn
GG-12	Revitalizing and Aerating Sod
GG-13	Ordering and Maintaining Repair Parts
GG-14	Lubricating a Tractor
GG-15	Changing the Crankcase Oil Filter
GG-16	Servicing Spark Plugs
GG-17	Servicing the Distributor
GG-18	Replacing Radiator Hoses
GG-19	Inspecting Tractor Tires
GG-20	Adding Oil in Small Engines
GG-21	Servicing Carburetor Air Cleaners on Small Engines
GG-22	Adjusting Small Engine Idle Speed
GG-23	Cleaning and Oiling Electric Motors
GG-24	Servicing Chain Drives

GG-25	Servicing Belt Drives
GG-26	Servicing Gear Drives
GG-27	Servicing Hand Tools
GG-28	Servicing Rotary Type Mower Cutting Blades
GG-29	Repairing Extension Cords
GG-30	Preparing a Tractor for Painting
GG-31	Painting a Tractor
GG-32	Building Supporting Structures for Training Vines
GG-33	Constructing Plant-Holding Arbors
GG-34	Constructing Fences
GG-35	Constructing Portable Hot Caps
GG-36	Constructing Portable Shading Devices
GG-37	Constructing a Stone or Brick Wall
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GG-39	Repairing Asphalt and Concrete Surfaces
GG-40	Cleaning Streets
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GG-42	Cleaning Ornamental Pools
GG-43	Maintaining Swimming Pools
GG-44	Cleaning Rest Rooms
GG-45	Cleaning and Digging Drainage Ditches
GG-46	Cldaning Grounds of Leaves and Litter
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GG-48	Reapiring Faucets
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GG-61	Pruning and Trimming Trees

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GG-63	Removing Dead and Unwanted Trees
GG-64	Pruning Shrubs to Provide Stimulation and Rejuvenation
GG-65	Pruning Shrubs for Shaping
GG-66	Pruning Hedges for Shaping
GG-67	Training Plants and Shrubs
GG-68	Purchasing and Storing Chemicla Supplies
GG-69	Controlling Insects on Plants
GG-70	Applying Chemicals with a Tractor-Mounted Sprayer
GG-71	Applying Weed Killing Compounds
GG-72	Applying Chemicals to Diseased Plants
GG-73	Purchasing and Transporting Plants, Equipment, Supplies

GARDENING-GROUNDSKEEPING RESOURCES - MICHIGAN

Available from:

Cooperative Extension Service
Michigan State University
East Lansing, Michigan

BULLETINS:

E-673	Lawn Establishment
E-944	Pesticides for Ornamentals
E-786	Fertilizing Shade and Ornamental Trees
E-933	Liquid Fertilizers
E-498	Sampling Soils
E-486	Secondary and Micronutrients
E-534	Controlling Pests of Trees and Shrubs
E-962	Repairing Storm Damage to Shade and Ornamental Trees
	Establishing a Lawn

Available from:

Agriculture and Natural Resources Education Institute
Michigan State University
East Lansing, Michigan

Weed Identification

GARDENING-GROUNDSKEEPING RESOURCES - MISSISSIPPI

Available from:

Mississippi State University
Agricultural Education Department
Curriculum Coordinating Unit
Mississippi State, MS 39762

A Reference for Liming Soils for Greater Profit - by L.P. Jacks and T.E. Ellis

Basic Principles of Soil Science - by L.P. Jacks and J. Roland Hamilton

Available from:

Instructional Materials Laboratory
10 Industrial Education Building
University of Missouri - Columbia
Columbia, Missouri 65211

SOUND SLIDE SERIES:

Concrete: Placing, Finishing and Curing Flat Slabs

GARDENING-GROUNDSKEEPING RESOURCES - NEW YORK

Available from:

The University of the State of New York
The State Education Department
Bureau of Occupational and Career Curriculum
Albany, New York 12234

MODULES:

No.	
01.0501-02	Pruning Ornamentals
01.0504-02	Constructing Landscape Features
01.0504-05	Implementing Landscape Plantings
01.0504-06	Maintaining Woody Shrubs in the Landscape
01.0504-07	Identification and Landscape Use of Herbaceous Plants
01.0506-01	Growing and Caring for Turfgrass
01.0506-02	Lawn Construction
01.0599-01	Controlling Insects, Diseases and Fertilization
01.0599-02	Preparing and Maintaining Ornamental Horticulture Soils
01.0599-03	Using Woody Plants in Ornamental Horticulture
01.0599-06	Operation and Maintenance of Horticulture Equipment
01.0603-01	Soil Science
01.0603-02	Soil and Water Management
01.0603-03	Erosion Control

GARDENING-GROUNDSKEEPING RESOURCES - OHIO

Available from:

Ohio Agricultural Education Curriculum Materials Service
The Ohio State University
Room 254
2120 Fyffe Road
Columbus, Ohio 43210

SLIDES AND SCRIPT:

Environmental Injuries to Landscape Plants
Pruning of Landscape Ornamentals
Insect and Insect-Like Pests of Landscape Ornamentals
Diseases of Landscape Ornamentals
Lawn Care and Management
Turf Diseases of the Midwest
Lawn Renovation and Reestablishment
Liming Acid Soils
Soil and Its Properties
Annuals
Perennials
Geraniums
Flowering Shrubs
Broad-Leaved Evergreens for the Landscape
Deciduous Shrubs for the Landscape
Narrow-Leaved Evergreens for the Landscape
Grounds Covers and Hedges for the Landscape

MANUALS:

Turf Management
Some Common Types of Insects
Weed Control, Cultural and Chemical

TRANSPARENCIES:

Weed Control Transparency Masters

GARDENING-GROUNDSKEEPING RESOURCES - OKLAHOMA

Available from:

Oklahoma State Department
Vocational & Technical Education Curriculum And Instruction Materials Center
1515 West Sixth Avenue
Stillwater, OK 74074

TEACHER GUIDE/STUDENT MANUAL:

Principles of Pesticide Use, Handling, and Application

GARDENING-GROUNDSKEEPING RESOURCES - TEXAS

Available from:

Vocational Instructional Services
F.E. Box 182
Texas A & M University
College Station, Texas 77843

MANUALS:

Agricultural Chemical Sales and Services
Fertilizer Sales and Services
Irrigation Equipment Sales and Services

GARDENING-GROUNDSKEEPING RESOURCES - WEST VIRGINIA

Available from:

Mineral County Vocational-Technical Center
Keyser, West Virginia

The Park Caretaker: A Suggested Course Outline for Buildings and Grounds Maintenance - by J. Richard Campbell

GARDENING-GROUNDSKEEPING RESOURCES - WISCONSIN

Available from:

University of Wisconsin
Cooperative Extension Service
Madison, Wisconsin

BULLETINS AND PAMPHLETS:

No.	
118	Controlling Lawn Weeds
150	Understanding Pesticide Labels
504	Spring Bulbs
576	Evergreens - Their Care - Maintenance
590	Deciduous Shrubs - Pruning and Care
592	Insect and Disease Control in the Flower Garden
608	Shade Trees - Pruning and Care
670	Sampling Lawn and Garden Soils

Equipment Operation and Maintenance

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- Add Oil to Small Engines, *page 3*
- Service Belt Drives on Groundskeeping Equipment, *page 5*
- Clean Centrifugal Fertilizer Applicators, *page 7*
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Equipment Operation and Maintenance

Gardening-Groundskeeping Unit: EQUIPMENT OPERATION AND MAINTENANCE

Competency Task: CLEAN AND SHARPEN HAND TOOLS

Performance Objective	Learning Activities	Evaluation	Resources
Given various tools in need of cleaning and sharpening (i.e. hoes, pruners, shovels), and the supplies necessary for cleaning and sharpening tools, remove all foreign material and sharpen the tools. For satisfactory performance, gaps should be removed from the cutting edge of the tools, the original bevel of the cutting edge should be maintained and all work must meet instructor approval.	1) Read appropriate selections from Master Resource List	1) Notes	Selections from Master Resource List KENTUCKY
	2) Read subject matter units	2) Notes	GG-27 'Servicing Hand Tools' (module)
	3) Demonstration - groundskeeper/instructor	3) Attendance	NEW YORK
	4) Complete Performance Objective	4) Performance Guide/ Instructor Approval	01.0599-06 'Operation and Maintenance of Horticultural Equipment' (module) Groundskeeper Performance Guide

Performance Guide CLEAN AND SHARPEN HAND TOOLS

1. Wear safety glasses when using power grinder or electric wire brush.

2. Use solvent, electric wire brush, or hand wire brush to remove foreign material from tool.

3. Clamp tool securely in vise.

4. Remove gaps from cutting edge of tool.

5. Sharpen tool with hand file or power file, maintaining original bevel. Caution: if using a hand file, grip file firmly and take short strokes to prevent hand injuries on tool cutting edges.

6. Apply coat of oil to tools to prevent rust.

7. Return all equipment to proper storage area.

Gardening-Groundskeeping Unit: EQUIPMENT OPERATION AND MAINTENANCE

Competency Task: ADD OIL TO SMALL ENGINES

Performance Objective	Learning Activities	Evaluation	Resources
Given a manufacturer's manual and oil type recommended by manufacturer, add oil in a small engine. For satisfactory performance, the dipstick or plug will show that the oil is level with the 'full' mark, there should be no oil leaks around parts which have been removed, and work must meet instructor approval.	1) Read appropriate selections from Master Resource List	1) Notes	Selections from Master Resource List CALIFORNIA 'Small Gasoline Engines' (manual)
	2) View filmstrips/slides	2) Notes	
	3) Read subject-matter units	3) Notes	KENTUCKY
	4) Read manufacturer's instructions	4) Notes	GG-20 'Adding Oil in Small Engines' (module)
	5) Group discussion - check oil daily, damage to engine if oil level too low or too full	5) Participation	NEW YORK 01.0599-06 'Operation and Maintenance of Horticultural Equipment' (module)
	6) Demonstration - groundskeeper/instructor	6) Attendance	Manufacturer's Manuals
	7) Complete Performance Objective	7) Performance Guide/ Instructor Approval	Performance Guide

Performance Guide ADD OIL TO SMALL ENGINES

1. Operate engine until warm.
2. Remove oil fill plug and check level of oil, or check level of oil with dipstick.
3. Fill crankcase with oil recommended by manufacturer. Caution: never overfill crankcase.
4. Replace plugs or covers removed when checking oil level and filling crankcase.
5. Return all tools and equipment to proper storage areas.

Gardening-Groundskeeping Unit: EQUIPMENT OPERATION AND MAINTENANCE

Competency Task: SERVICE BELT DRIVES ON GROUNDSKEEPING EQUIPMENT

Performance Objective	Learning Activities	Evaluation	Resources
Given a manufacturer's manual, solvents, lubricants and the necessary tools and equipment, service belt drives on groundskeeping equipment. For satisfactory performance, all parts will be clean, lubricated, adjusted to the tension recommended by the manufacturer, and all work must meet instructor approval.	1) Read appropriate selections from Master Resource List	1) Notes	Selections from Master Resource List KENTUCKY G-25 'Servicing Belt Drives' (module) NEW YORK 01.0599-06 'Operation and Maintenance of Horticultural Equipment' (module) Manufacturer's Manual Groundskeeper Performance Guide
	2) Read subject-matter units	2) Notes	
	3) Read manufacturer's manual	3) Notes	
	4) Group discussion - method of servicing belt drives, equipment with belt drives, importance of servicing belt drives	4) Participation	
	5) Demonstration - groundskeeper/instructor	5) Attendance	
	6) Complete Performance Objective	6) Performance Guide/ Instructor Approval	

1. Note: There are three basic types of belt drives - flat belts, v-belts, and round belts. These may be made of leather, rubber, fabric, steel, wire, or combinations of these materials. They may have an opened, turned, crossed, surpentine, or mule form.

2. Check for signs of improper installation (belt stretches beyond take-up, fails for no visible reason, turns over, is cut on bottom, creeps or slips.) Adjust as necessary.

3. Check condition of pulleys and smooth or adjust as needed.

4. Check belt alignment and tension. Adjust to specifications.

5. Clean belt of oil and grease with cloth and solvent. Add belt dressing if recommended by manufacturer.

6. Clean belt shields and screens.

7. Return all tools and equipment to storage area.

Gardening-Groundskeeping Unit: EQUIPMENT OPERATION AND MAINTENANCE

Competency Task: CLEAN CENTRIFUGAL FERTILIZER APPLICATORS

Performance Objective	Learning Activities	Evaluation	Resources
Given a centrifugal fertilizer spreader and water and cleaning supplies, clean the fertilizer spreader. For satisfactory performance, all foreign particles should be removed from the hopper, gears, and distributing wheel, the washed parts must be thoroughly dried and protected against rust, and cleaning must meet instructor approval.	1) Read appropriate selections from Master Resource List	1) Notes	Selections from Master Resource List KENTUCKY GG-10 'Cleaning and Lubricating Fertilizer Applicators' (module) NEW YORK 01.0599-06 'Operation and Maintenance of Horticultural Equipment' (module) Manufacturer's Manual Groundskeeper Performance Guide
	2) Read subject-matter units	2) Notes	
	3) Group discussion - importance of equipment cleanliness, methods of cleaning	3) Participation	
	4) Read manufacturer's manual	4) Notes	
	5) Demonstration - groundskeeper/instructor	5) Attendance	
	6) Complete Performance Objective	6) Performance Guide/ Instructor Approval	

CLEAN CENTRIFUGAL FERTILIZER APPLICATORS

1. Thoroughly wash spreader with water and cleaning agents.
2. Inspect spreader for residue.
3. Use brush and/or cleaning materials to remove any undissolved fertilizer.
4. Rinse spreader with hose and water.
5. Remove water from gears or other unexposed areas with dry, clean cloth.
6. Coat all gears with oil or grease after washing to prevent rust.
7. Return all equipment to proper storage area.

Gardening-Groundskeeping Unit: EQUIPMENT OPERATION AND MAINTENANCE

Competency Task: USE A ROTARY TILLER

Performance Objective	Learning Activities	Evaluation	Resources
Given a rotary tiller and operator's manual, till a garden area. For satisfactory performance, the area will be tilled to a depth of 6 inches, the surface will be smooth and level, and tilling will meet instructor approval.	1) Read appropriate selections from Master Resource List	1) Notes	Selections from Master Resource List Operator's Manual Groundskeeper Performance Guide
	2) Read operator's manual	2) Notes	
	3) Group discussion - front and rear tine tillers, tiller maintenance, tiller use	3) Participation	
	4) Demonstration - groundskeeper/instructor	4) Attendance	
	5) Complete Performance Objective	5) Performance Guide/ Instructor Approval	

1. Perform service check on tiller.
2. Set tilth, if applicable.
3. Check stabilizer bars and/or chains for proper fit, if applicable.
4. Start engine.
5. Determine starting point and direction of travel.
6. Engage rotors by adjusting belt or chain levers.
7. Lower rotors at starting point.
8. Set throttle according to instructions given in operator's manual, and allow tiller to set travel speed.
9. Do not walk behind tiller to avoid compacting soil.
10. Clean tiller and return to storage.

Gardening-Groundskeeping Unit: EQUIPMENT OPERATION AND MAINTENANCE

Competency Task: USE A ROTARY MOWER

Performance Objective	Learning Activities	Evaluation	Resources
Given a bluegrass lawn area, a rotary mower, and operating instructions, mow the grass within the confines of the area. For satisfactory performance, the grass height should be within ±¼ inch of the recommendations of the cooperative extension service office for cutting bluegrass and mowing must meet instructor approval.	1) Read appropriate selections from Master Resource List	1) Notes	Selections from Master Resource List ILLINOIS 498 'Using Power Lawn Mowers Safely' KENTUCKY GG-54 'Mowing Grass' (module) GG-28 'Servicing Rotary Type Cutting Blades' (module) CALIFORNIA 'Small Gasoline Engines' (manual) NEW YORK 01.0599-06 'Operation and Maintenance of Horticultural Equipment' (module) Operator's Manual Cooperative Extension Service Office Groundskeeper Performance Guide
	2) View filmstrips/slides	2) Notes	
	3) Read subject-matter units	3) Notes	
	4) Read operator's manual	4) Notes	
	5) Group/Independent Research - cutting recommendations for bluegrass	5) Notes/Report findings	
	6) Group discussion - dry vs. wet weather cutting heights, changing cutting patterns, mower cleanliness to prevent spread of disease.	6) Participation	
	7) Demonstration - groundskeeper/instructor	7) Attendance	
	8) Complete Performance Objective	8) Performance Guide/ Instructor Approval	

Performance Guide USE A ROTARY MOWER

1. Perform service check on mower.
2. Set height of cut of mower blade (dry weather-higher, wet weather-lower)
3. Determine starting point and direction of travel (cutting patterns).
4. Start engine.
5. Set throttle control.
6. Mow grass within area. Caution: watch for rocks, sticks, bottles, cans and other debris which could cause injury to operator or bystander. If possible, keep discharge chute pointed away from people, buildings, walkways, streets, and cars.
7. Clean mower and return to storage.

Gardening-Groundskeeping Unit: EQUIPMENT OPERATION AND MAINTENANCE

Competency Task: USE A TRACTOR

Performance Objective	Learning Activities	Evaluation	Resources
Given a tractor, an operator's manual, and a flat, open driving area, drive the tractor through the area, observing all safety rules and regulations. For satisfactory performance, all items on the instructor checklist must be rated 'acceptable'.	1) Read appropriate selections from Master Resource List	1) Notes	Selections from Master Resource List ILLINOIS 3040 'Preventing Tractor Overturns' (subject-matter unit) 'Tractor Safety Transparencies' (transparencies) GEORGIA 'Operating Tractors for Groundskeeping and Ornamental Horticulture' (manual) NEW YORK 01.0599-06 'Operation and Maintenance of Horticultural Equipment' (module) Operators' Manual Groundskeeper Performance Guide Instructor Checklist
	2) Read subject-matter units	2) Notes	
	3) Group discussion - tractor -gasoline/diesel, tractor safety, various tractor brands	3) Participation	
	4) Demonstration - groundskeeper/instructor	4) Attendance	
	5) Complete Performance Objective	5) Performance Guide/ Instructor Checklist	

Performance Guide USE A TRACTOR

1. Identify all controls and their pruposes.
2. Check seat position and adjust, if necessary.
3. If tractor is stored in building, check for adequate ventilation before starting engine.
4. Check fuel level.
5. Open fuel supply or lines.
6. Place transmission in proper setting for starting engine.
7. Set speed control lever.
8. Disengage clutch, if applicable.
9. Set choke.
10. Start engine.
11. Drive tractor through area.
12. Return tractor to proper storage area.

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Instructor Checklist USE A TRACTOR

ACCEPTABLE

1. Engine was started without excessive draining of battery power.
2. Machine motion was begun without jerks or grinding of gears.
3. Correct gear selection was made for level terrain.
4. Speed selection of throttle setting was correct for level terrain.
5. Machine was stopped without sliding tires.
6. Hand signals were used correctly.
7. Engine was stopped without excessive backfire.

Gardening-Groundskeeping Unit: EQUIPMENT OPERATION AND MAINTENANCE

Competency Task: SOW SEED WITH A ROTARY SPREADER

Performance Objective	Learning Activities	Evaluation	Resources
Given a rotary spreader, and ryegrass seed, sow the seed over the recommended area of soil. For satisfactory performance, the seed should be sown at the recommended rate with uniform coverage, and sowing must meet instructor approval.	1) Read appropriate selections from Master Resource List	1) Notes	Selections from Master Resource List Operator's Manual Seed Package Groundskeeper Performance Guide
	2) Read operator's manual.	2) Notes	
	3) Group discussion - rotary vs. broadcast spreader, seed types, rate of application	3) Participation	
	4) Group/Independent Project - figure rates of application for various areas and types of seed.	4) Notes/Instructor Approval	
	5) Demonstration - groundskeeper/instructor	5) Attendance	
	6) Complete Performance Objective	6) Performance Guide/ Instructor Approval	

SOW SEED WITH A ROTARY SPREADER

1. Perform service check on spreader.
2. Determine boundaries for area to be sown.
3. Fill seeder with proper amount of seed.
4. Determine starting point and direction of travel.
5. Begin walking at normal pace and open rate gate.
6. Make ½ application rate in one direction, and the other ½ at a right angle to the first application.
7. Walk at an even gait.
8. Return all equipment to proper storage area.

Gardening-Groundskeeping Unit: EQUIPMENT OPERATION AND MAINTENANCE

Competency Task: COMPACT A SEED BED WITH A LAWN ROLLER

Performance Objective	Learning Activities	Evaluation	Resources
Given a lawn roller and access to water, compact a lawn seed bed (not hydro-seeded) with the lawn roller. For satisfactory performance, the area must be compacted twice with the roller in a crosswise direction, each pass of the roller must overlap 12 inches and work must meet instructor approval.	1) Read appropriate selections from Master Resource List	1) Notes	Selections from Master Resource List ILLINOIS 651 'Steps to a Better Lawn' (slidefilm/slideset) 5021 'Establishing a Lawn' (subject-matter unit) KENTUCKY GG-8 'Preparing a Lawn Seed Bed' (module) MICHIGAN E-673 'Lawn Establishment' (bulletin) 'Establishing A Lawn' (bulletin) NEW YORK 01.506-02 'Lawn Construction' (module) OHIO 'Lawn Renovation and Reestablishment' (slides and script)
	2) View filmstrips/slides	2) Notes	
	3) Read subject-matter units	3) Notes	
	4) Group discussion - weight needed in lawn roller, reasons for compacting a seed bed, method of rolling seed bed.	4) Participation	
	5) Demonstration - groundskeeper/instructor	5) Attendance	
	6) Complete Performance Objective	6) Performance Guide/ Instructor Approval	

Gardening-Groundskeeping Unit: EQUIPMENT OPERATION AND MAINTENANCE

Competency Task: COMPACT A SEED BED WITH A LAWN ROLLER - 2

Performance Objective	Learning Activities	Evaluation	Resources
			Groundskeeper Performance Guide

COMPACT A SEED BED WITH A LAWN ROLLER

1. Determine amount or level to fill roller.
2. Fill roller to proper level with water.
3. Determine starting point and direction of travel.
4. Guide roller uniformly over area, overlapping each path 12 inches.
5. Repeat steps 3 and 4 in opposite or cross-wise direction.
6. Return equipment to storage area.

Gardening-Groundskeeping Unit: EQUIPMENT OPERATION AND MAINTENANCE

Competency Task: EDGE A SIDEWALK WITH A POWER EDGER

Performance Objective	Learning Activities	Evaluation	Resources
Given 200 feet of sidewalk, an operator's manual, and safety glasses, trim grass overlapping the sidewalk with a power edger. For satisfactory performance, the grass should be trimmed even with the edge of the sidewalk bordering the grass and edging must meet instructor approval.	1) Read appropriate selections from Master Resource List	1) Notes	Selections from Master Resource List
	2) Read subject-matter units	2) Notes	KENTUCKY GG-56 'Using a Power Edger (module)
	3) Read Operator's manual	3) Notes	Operator's Manual
	4) Group discussion - power edger safety and use	4) Participation	Groundskeeper Performance Guide
	5) Demonstration - groundskeeper/instructor	5) Attendance	
	6) Complete Performance Objective	6) Performance Guide/ Instructor Approval	

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EDGE A SIDEWALK WITH A POWER EDGER

1. Perform service check on edger.
2. Set edger head to desired position.
3. Start edger.
4. Select speed, if applicable.
5. Determine starting point and direction of travel.
6. Lower blade to edge of sidewalk.
7. Walk at slow pace while trimming.
8. Dispose of grass trimmings as indicated by instructor.
9. Return all equipment to storage area.

Gardening-Groundskeeping Unit: EQUIPMENT OPERATION AND MAINTENANCE

Competency Task: DIG DRAINAGE DITCH WITH A DITCHWITCH

Performance Objective	Learning Activities	Evaluation	Resources
Given a 6 foot folding rule, a level, a wheelbarrow, shovel, a ditchwitch and operator's manual, dig a straight drainage ditch. For satisfactory performance, the ditch should follow a line with a grade of ½ inch per foot of travel and must meet instructor approval.	1) Read appropriate selections from Master Resource List	1) Notes	Selections from Master Resource List Operator's Manual Groundskeeper Performance Guide
	2) Read Operator's manual	2) Notes	
	3) Group discussion - ditchwitch operation, depth and grade of drainage ditches	3) Participation	
	4) Demonstration - groundskeeper/instructor	4) Attendance	
	5) Complete Performance Objective	5) Performance Guide/ Instructor Approval	

Performance Guide DIG DRAINAGE DITCH WITH A DITCHWITCH

1. Perform service check on ditchwitch.
2. Study operator's manual for operation of ditchwitch prior to instructor demonstration.
3. Practice operating ditchwitch in an open area observing safety rules.
4. Move ditchwitch into position and begin to work.
5. Using ditchwitch, begin removing soil along drainage line.
6. Reposition ditchwitch as ditch is lengthened.
7. Check grade of ditch periodically with level and 6 foot folding rule.
8. Remove additional soil as required after checking grade.
9. Return all tools and equipment to storage area.

Equipment and Supplies

- Evaluate Shop and Facility Layout, *page 25*
- Inventory Plants, Equipment and Supplies, *page 27*
- Evaluate Capabilities of Equipment, *page 29*
- Evaluate the Maintenance of Equipment, *page 31*

Equipment and Supplies

Gardening-Groundskeeping Unit: EQUIPMENT AND SUPPLIES

Competency Task: EVALUATE SHOP AND FACILITY LAYOUT

Performance Objective	Learning Activities	Evaluation	Resources
Given a shop and related facilities, develop a list of 9 criteria to be used in evaluating the layout of the shop and facilities. For satisfactory performance, 7 out of 9 criterion must match those listed in the instructor checklist.	1) Read appropriate selections from Master Resource List	1) Notes	Selections from Master Resource List ILLINOIS
	2) Read subject-matter units	2) Notes	3022 'Safety in the Agricultural Mechanics Shop' (subject-matter unit)
	3) Group discussion - shop/facility layouts	3) Participation	
	4) Field Trip - local maintenance shop to observe layout	4) Attendance	3044 'A Color Code for Shop Safety' (subject-matter unit) Local Maintenance Shop
	5) Complete Performance Objective	5) Performance Guide/ Instructor Approval	Instructor Checklist

Instructor Checklist

EVALUATE SHOP AND FACILITY LAYOUT

ACCEPTABLE

1. Overall design.
2. Adequate space (i.e. equipment storage, cold/heated work space)
3. Efficient space utilization
4. Neatness
5. Cleanliness
6. Adequate ventilation
7. Ample lighting (natural and artificial)
8. Ease of modification
9. Adequate safety features (i.e. floor drains)
10. Ease of maintenance to building itself
11. Future expansion considerations

Gardening-Groundskeeping Unit: EQUIPMENT AND SUPPLIES

Competency Task: INVENTORY PLANTS, EQUIPMENT AND SUPPLIES

Performance Objective	Learning Activities	Evaluation	Resources
Given a current inventory of plants, equipment and supplies, and an established system of purchasing and supply checkout, maintain on a weekly basis, an accurate accounting of all items for a period of one month. For satisfactory performance, student inventory totals must match instructor totals from an item-by-item check at the end of the period.	1) Read appropriate selections from Master Resource List	1) Notes	Selections from Master Resource List KENTUCKY GG-73 'Purchasing and Transporting Plants, Equipment and Supplies' (module) Groundskeeper Performance Guide
	2) Read subject-matter units	2) Notes	
	3) Group discussion - importance/use of inventory records, how to set up inventory sheets, frequency of taking inventory	3) Participation	
	4) Demonstration - groundskeeper/instructor	4) Attendance	
	5) Complete Performance Objective	5) Performance Guide/ Instructor Approval	

1. Review carefully the established system of purchasing and supply checkout.
2. Revise systems for improving efficiency and reducing costs, if applicable. Include means for recording items in stock, items checked out, and items purchased.
3. Record daily items checked out and items purchased.
4. Check items in stock at end of each week.
5. After one month, present inventory totals to instructor for inspection.

Gardening-Groundskeeping Unit: EQUIPMENT AND SUPPLIES

Competency Task: EVALUATE CAPABILITIES OF EQUIPMENT

Performance Objective	Learning Activities	Evaluation	Resources
Given access to a used piece of power driven equipment and the operator's manual, develop a list of 10 factors to consider in evaluating the capabilities of that piece of equipment. For satisfactory performance, 8 out of 10 factors should match those items listed in the instructor checklist.	1) Read appropriate selections from Master Resource List	1) Notes	Selections from Master Resource List Operator's Manual Groundskeeper Instructor Checklist
	2) Review Operator's manual	2) Notes	
	3) Group discussion - evaluation factors (considerations in instructor checklist) for various pieces of equipment	3) Participation	
	4) Demonstration - groundskeeper/instructor	4) Attendance	
	5) Complete Performance Objective	5) Performance Guide/ Instructor Approval	

Instructor Checklist

EVALUATE CAPABILITIES OF EQUIPMENT

ACCEPTABLE

1. Size
2. Weight
3. Operating Speed
4. Ease of handling
5. Amount of previous use
6. Average life of equipment
7. Service record
8. Amount of wear evident
9. Mechanical inspections results
10. Past repair record
11. Strength of construction
12. Difficulty of jobs for which the equipment was designed
13. Recommendation(s) from an experienced repairman or dealer
14. Manufacturer's recommended use(s)
15. Special accessories (i.e. turf ties or tractor, snowblowers)
16. Contact original owner, if known.
17. Test run equipment

Gardening-Groundskeeping Unit: EQUIPMENT AND SUPPLIES

Competency Task: EVALUATE THE MAINTENANCE OF EQUIPMENT

Performance Objective	Learning Activities	Evaluation	Resources
Given service records, repair records and the operator's manual for a riding rotary mower, determine if service and maintenance work has been performed according to manufacturer's recommendations. For satisfactory performance, answers will be judged for correctness by the instructor.	1) Read appropriate selections from Master Resource List	1) Notes	Selections from Master Resource List Operator's Manual
	2) Read Operator's manual	2) Notes	Groundskeeper
	3) Group discussion - mower maintenance, frequency of maintenance, employee safety, quality of mowing, speed and economy	3) Participation	Performance Guide
	4) Demonstration - groundskeeper/instructor	4) Attendance	
	5) Complete Performance Objective	5) Performance Guide/ Instructor Approval	

Performance Guide EVALUATE MAINTENANCE OF EQUIPMENT

1. Read operator's manual to determine necessary service and maintenance work.
2. Determine from service and repair records if proper maintenance work has been performed as recommended by the manufacturer. Also consider employee safety and quality of mowing.
3. Present answers to instructor for evaluation.

Soils

- Take Soil Samples, *page 33*
- Send Samples for Analysis, *page 35*
- Read and Interpret Soil Test Analysis, *page 37*
- Develop Procedures for Improving Soils, *page 40*
- Prepare Soil with a Tiller, *page 44*
- Control Soil Erosion, *page 46*
- Haul and Spread Topsoil, *page 48*

Soils

Gardening-Groundskeeping Unit: SOILS

Competency Task: TAKE SOIL SAMPLES

Performance Objective	Learning Activities	Evaluation	Resources
Given a 1000 sq. foot area to be sampled (specify turf, plants, or general use) and the necessary tools and materials, take a representative, composite soil sample of the area. For satisfactory performance, the collection and preparation of the soil sample must follow the Performance guide outline and meet instructor approval.	1) Read appropriate selections from Master Resource List	1) Notes	Selections from Master Resource List ILLINOIS 4001 'Collecting and Preparing Soil Samples' (subject-matter unit) KENTUCKY GG-1 'Taking Soil Samples' (subject-matter unit) MICHIGAN E-498 'Sampling Soils' (bulletin) WISCONSIN 670 'Sampling Lawn and Garden Soils' (bulletin) Cooperative Extension Service Office Groundskeeper Performance Guide
	2) Read subject-matter units	2) Notes	
	3) Group discussion - methods of taking soil samples, importance of testing soils	3) Participation	
	4) Group/Independent Project - cooperative extension service office recommendations on methods of taking soil samples.	4) Notes/Report findings	
	5) Demonstration - groundskeeper/instructor	5) Attendance	
	6) Complete Performance Objective	6) Performance Guide/ Instructor Approval	

Performance Guide TAKE SOIL SAMPLES

1. Identify field on lab sheets.
2. Complete needed laboratory information on sheet and container.
3. Plot sample area on lab sheet.
4. Take a representative composite soil sample by lifting soil from recommended depth using shovel and/or soil probe.
   a. lawn area - 3-4" depth
   b. bed area - 6" depth
5. Package soil samples in container provided by local cooperative extension service office.
6. Return all tools and equipment to storage area.

Gardening-Groundskeeping Unit: SOILS

Competency Task: SEND SAMPLES FOR ANALYSIS

Performance Objective	Learning Activities	Evaluation	Resources
Given soil samples, supplies and necessary information, send samples to a soil testing laboratory for analysis. For satisfactory performance, information on the sample container must be complete and correct, the analysis sheet must be firmly attached to the soil container, and all procedures must meet instructor approval.	1) Read appropriate selections from Master Resource List	1) Notes	Selections from Master Resource List ILLINOIS 4001 'Collecting and Preparing Soil Samples' (subject-matter unit) KENTUCKY GG-1 'Taking Soil Samples' (module) MICHIGAN E-498 'Sampling Soils' (bulletin) WISCONSIN 670 'Sampling Lawn and Garden Soils' (bulletin) Cooperative Extension Service Office Groundskeeper Performance Guide
	2) Read subject-matter units	2) Notes	
	3) Group discussion - correct methods of packaging soil samples	3) Participation	
	4) Group/Independent Project - cooperative extension service office recommendation on packaging soil samples	4) Notes/Report findings	
	5) Demonstration - groundskeeper/instructor	5) Attendance	
	6) Complete Performance Objective	6) Performance Guide/ Instructor Approval	

1. Fold completed analysis sheet and place inside container box or tape to one side of box.
2. Seal container by interlocking flaps.
3. Wrap container box with shipping paper and seal with string or tape.
4. Address package with proper mailing and return addresses.
5. Purchase and apply postage.
6. Deposit in mailbox.

Gardening-Groundskeeping Unit: SOILS

Competency Task: READ AND INTERPRET SOIL TEST ANALYSIS

Performance Objective	Learning Activities	Evaluation	Resources
Given a soil sample report for a specific area and plant nutrient tables, determine the amount of fertilizer needed to bring the area to a specified fertility level for the specified plants. For satisfactory performance, the plan should be developed for a 3 year period, follow the performance guide outline and meet instructor approval.	1) Read appropriate selections from Master Resource List	1) Notes	Selections from Master Resource List
	2) View filmstrips/slides	2) Notes	ILLINOIS
	3) Read subject-matter units	3) Notes	640 'Fertilizing and Watering Shade and Ornamental Trees' (slidefilm)
	4) Group discussion - fertility requirements of specific plants, affect of nutrient deficiencies on plants, methods of correcting nutrient deficiencies	4) Participation	4002a 'pH Test for Soil Acidity' (subject-matter unit) 4003b 'Testing Soils for Phosphorus' (subject-matter unit)
	5) Group/Independent Project - cooperative extension service office recommendations	5) Notes/Report findings	4004b 'Determining Available Potassium in Soils' (subject-matter unit)
	6) Demonstration - groundskeeper/instructor	6) Attendance	4005 'Nature of Soil Acidity and Major Plant Nutrients' (subject-matter unit)
	7) Complete Performance Objective	7) Performance Guide/ Instructor Approval	4006a 'Soil Liming' (subject-matter unit) 4008a 'Recommended Potassium Fertilizers' (subject-matter unit) 4010a 'Planning a Fertilizer Program' (subject-matter unit)

Gardening-Groundskeeping Unit: SOILS

Competency Task: READ AND INTERPRET SOIL TEST ANALYSIS

Performance Objective	Learning Activities	Evaluation	Resources
			ILLINOIS - con't. 4011a 'Hunger Signs in Crops' (subject-matter unit) 4052 'Understanding Soils' (subject-matter unit) KENTUCKY GG-2 'Developing Fertilization Schedules' (module) GG-60 'Applying Fertilizer to Trees' (module) NEW YORK 01.0599-02 'Preparing and Maintaining Ornamental Horticultural Soils' (module) Soil Test Reports Cooperative Extension Service Office Groundskeeper Performance Guide

1. Review soil test report.
2. Note nutrient deficiencies listed.
3. Determine methods of correcting deficiencies.
4. Develop fertilization schedule for a three year period.
    - a. number of fertilizer applications
    - b. rate of fertilizer applications
    - c. dates to be applied
    - d. method(s) of fertilizer application

Gardening-Groundskeeping Unit: SOILS

Competency Task: DEVELOP PROCEDURES FOR IMPROVING SOILS

Performance Objective

Given a description of a landscaped area (which has low soil fertility), types of plant material and soil analysis reports, develop procedures for improving the soil in the area. For satisfactory performance, soil improvement must follow performance guide outline and all items in the instructor checklist must be rated 'acceptable'.

Learning Activities	Evaluation
1) Read appropriate selections from Master Resource List	1) Notes
2) View filmstrips/slides	2) Notes
3) Read subject-matter units	3) Notes
4) Group discussion - various procedures for improving soils, length of time needed for improvement methods to affect/react with soil	4) Participation
5) Group/Independent Project - cooperative extension service office recommendations	5) Notes/Report findings
6) Demonstration - groundskeeper/instructor	6) Attendance
7) Complete Performance Objective	7) Performance Guide/ Instructor Checklist

Resources

Selections from Master Resource List

ILLINOIS

640 'Fertilizing and Watering Shade and Ornamental Trees' (slidefilm)

4006a 'Soil Liming' (subject-matter unit)

4008a 'Recommended Potassium Fertilizers' (subject-matter unit)

4010a 'Planning a Fertilizer Program' (subject-matter unit)

KENTUCKY

GG-2 'Developing Fertilization Schedules' (module)

GG-9 'Applying Fertilizer' (module)

GG-60 'Applying Fertilizer to Trees' (module)

Gardening-Groundskeeping Unit: SOILS

Competency Task: DEVELOP PROCEDURES FOR IMPROVING SOILS - 2

Performance Objective	Learning Activities	Evaluation	Resources
			MICHIGAN 'Fertilizing Shade and Ornamental Trees' (bulletin) 'Liquid Fertilizers' (bulletin) 'Secondary and Micronutrients' (bulletin) OHIO 'Liming Acid Soils' (slideset and script) Soil Test Reports Cooperative Extension Service Office Groundskeeper Performance Guide Instructor Checklist

1. Review description of landscaped area.
2. Determine with supervisor/instructor how often soil samples are to be taken (i.e. yearly).
3. Review soil analysis report, pinpointing deficiencies in the soil.
4. Determine methods to be used to improve soil.
   a. qualities desired in good topsoil
   b. soil improvement crops (legumes)
   c. drainage as means for improving topsoil
   d. adding fertilizers or mulches
   e. irrigating soil
5. Develop procedures for each soil improvement method.
6. Test irrigation water to determine affect on soil.
   a. pH of irrigation water
   b. nutrient excess/deficiencies
   c. frequency of irrigation water tests(i.e. every 3-4 years)
7. Present to instructor for review.

ACCEPTABLE

1. Adding mulch or topsoil.
2. Preparing and using compost.
3. Sterilizing soil.

4a. Fertilizing soil - elements and micronutrients

4b. Soil amendments - lime, gypsum, sulfur

5. Improving drainage of soil.

Gardening-Groundskeeping Unit: SOILS

Competency Task: PREPARE SOIL WITH A TILLER

Performance Objective	Learning Activities	Evaluation	Resources
Given a rotary tiller and equipment operating instructions, prepare a 100 square foot plot of soil for planting Bluegrass seed. For satisfactory performance, the soil should be tilled to an average depth of 6 inches and to a medium tilth, and tilling must meet instructor approval.	1) Read appropriate selections from Master Resource List	1) Notes	Selections from Master Resource List NEW YORK
	2) Read subject-matter units	2) Notes	01.0599-06 'Operation and Maintenance of Horticultural Equipment' (module)
	3) Group discussion - rotary tiller operation, front vs. rear tine tillers, tilling depth, tiller maintenance	3) Participation	Operator's Manual Groundskeeper
	4) Demonstration - groundskeeper/instructor	4) Attendance	Performance Guide
	5) Complete Performance Objective	5) Performance Guide/ Instructor Approval	

Performance Guide PREPARE SOIL WITH A TILLER

1. Perform service check on tiller
2. Set tilth, if applicable.
3. Determine starting point and direction of travel.
4. Prepare seed bed:
   a. economically
   b. overcompensate if necessary (football field vs. home lawn)
   c. to provide for good drainage
5. Lower rotors at starting point.
6. Set throttle speed according to manufacturer's manual, and allow tiller to set travel speed.
7. Clean tiller and return to storage area.

Gardening-Groundskeeping Unit: SOILS

Competency Task: CONTROL SOIL EROSION

Performance Objective	Learning Activities	Evaluation	Resources
Given an area eroded by water and or wind, list a minimum of 5 ways that erosion can be prevented or remedied. For satisfactory performance, each of the 5 responses must correspond with those items listed in the instructor checklist.	1) Read appropriate selections from Master Resource List. 2) View filmstrips/slides 3) Read subject-matter units 4) Group discussion - soil erosion-causes and control measures 5) Group/Independent Project - cooperative extension service office recommendations 6) Complete Performance Objective	1) Notes 2) Notes 3) Notes 4) Participation 5) Notes/Report findings 6) Instructor Checklist	Selections from Master Resource List ILLINOIS 627 'Planting, Protecting Existing Features, Drainage and Driveways' (slideset) 646 'Groundcovers and Their Uses' (slidefilm/slideset) KENTUCKY GG-7 'Preventing and/or Controlling Water Erosion' (subject-matter unit) NEW YORK 01.0603-02 'Soil and Water Management' (module) 01.-603-03 'Erosion Control' (module) Cooperative Extension Service Office Groundskeeper Instructor Checklist

ACCEPTABLE

1. Sod areas
2. Plant groundcovers
3. Establish permanent cover
4. Plant strip covers
5. Sod waterways
6. Construct cross-drainage ways
7. Mulch area
8. Construct terraces

Gardening-Groundskeeping Unit: SOILS

Competency Task: HAUL AND SPREAD TOPSOIL

Performance Objective	Learning Activities	Evaluation	Resources
Given a 100 sq. ft. area void of topsoil, the necessary tools and equipment, a nearby soil source, haul and spread topsoil on the designated area to a depth of 10 to 12 inches. For satisfactory performance, the hauling and spreading of topsoil must follow the performance guide outline and meet instructor approval.	1) Read appropriate selections from Master Resource List	1) Notes	Selections from Master Resource List KENTUCKY GG-5 'Hauling and Spreading Topsoil' (module) Groundskeeper Performance Guide
	2) Read subject-matter units	2) Notes	
	3) Group discussion - soil sources, cost, methods of hauling and spreading topsoil, topsoil depths	3) Participation	
	4) Demonstration - groundskeeper/instructor	4) Attendance	
	5) Complete Performance Objective	5) Performance Guide/ Instructor Approval	

HAUL AND SPREAD TOPSOIL

1. Locate and mark fill stakes for proper depth.
2. Choose transportation route.
3. Load wheelbarrow/truck.
4. Transport and deposit topsoil on area.
5. Spread topsoil to desired depth.
6. Level topsoil with rake.
7. Clean up surrounding areas - walks, grass areas, etc.
8. Return tools and equipment to storage.

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Fertilizers

- Develop Fertilization Schedules, *page 50*
- Apply Fertilizers, *page 52*
- Fertilize Trees, *page 54*

Fertilizers

Gardening-Groundskeeping Unit: FERTILIZERS

Competency Task: DEVELOP FERTILIZATION SCHEDULES

Performance Objective	Learning Activities	Evaluation	Resources
Given the description of a landscaped area, a soil analysis report from a professional lab, and schedule form, develop a schedule for applying fertilizer to shrubs, trees, and lawns during a one-year period. For satisfactory performance, the schedule will be checked for accuracy by the instructor, using description of the landscaped area, the soil analysis report, and the fertilizer application reports from the cooperative extension service office.	1) Read appropriate selections from Master Resource List	1) Notes	Selections from Master Resource List
	2) Read subject-matter units	2) Notes	ILLINOIS 4010a 'Planning a Fertilizer Program' (subject-matter unit)
	3) Group discussion - information needed to develop fertilization schedule	3) Participation	
	4) Group/Independent Project - local industry practices	4) Notes/Report findings	KENTUCKY GG-2 'Developing Fertilizer Schedules' (module)
	5) Demonstration - groundskeeper/instructor	5) Attendance	Soil Test Reports Cooperative Extension Service Office
	6) Complete Performance Objective	6) Performance Guide/ Instructor Approval	Groundskeeper Performance Guide

1. Review description of landscaped area.
2. Review soil analysis report.
3. Refer to cooperative extension service office reports for analysis of various fertilizers.
4. List each type shrub, tree, and lawn area on prepared schedule form.
5. Identify type fertilizer and rate of application for each shrub, tree and lawn area.
6. Indicate approximate dates for fertilizing each shrub, tree, and lawn area.
7. Submit schedule for instructor review.

Gardening-Groundskeeping Unit: FERTILIZERS

Competency Task: APPLY FERTILIZERS

Performance Objective	Learning Activities	Evaluation	Resources
Given the necessary equipment, operator's manual, and the necessary fertilizer material, apply the fertilizer over a defined area of soil. For satisfactory performance, the application should be made uniformly over the plot and as close as possible to the recommendations of the cooperative extension service office for the particular plants on the plot. Application must also meet instructor approval.	1) Read appropriate selections from Master Resource List	1) Notes	Selections from Master Resource List ILLINOIS 4010a 'Planning a Fertilizer Program' (subject-matter unit) KENTUCKY GG-9 'Applying Fertilizer' (module) Operator's Manual Equipment Catalogues Cooperative Extension Service Office Groundskeeper Performance Guide
	2) View filmstrips/slides	2) Notes	
	3) Read subject-matter units	3) Notes	
	4) Review operator's manual	4) Notes	
	5) Group discussion - various fertilizer spreaders, fertilizer forms and methods of application	5) Participation	
	6) Examine pictures of various types of spreaders in equipment catalogues	6) Notes	
	7) Demonstration - groundskeeper/instructor	7) Attendance	
	8) Complete Performance Objective	8) Performance Guide/ Instructor Approval	

1. Determine type of applicator to be used. (i.e. broadcast(centrifugal), drop-type, (band) spreaders, liquid)

2. Check operator's manual for instructions.

3. Determine applicator setting for rate per area.

4. Close rate gate(s).

5. Fill applicator with fertilizer.

6. Determine direction of travel for uniform application - ½ application rate in one direction, the second ½ at right angles to the first application.

7. Walk at steady, even pace while operating applicator.

8. Clean applicator and return to storage area.

Gardening-Groundskeeping Unit: FERTILIZERS

Competency Task: FERTILIZE TREES

Performance Objective	Learning Activities	Evaluation	Resources
Given an established tree (3-8 inches in diameter) with a shoot growth of less than 8 to 12 inches per season, fertilize the tree. For satisfactory performance, the fertilizer must be applied equally to root areas throughout and 2 feet beyond the 'drip' line of the tree, and fertilization must meet instructor approval.	1) Read appropriate selections from Master Resource List	1) Notes	Selections from Master Resource List
	2) View filmstrips/slides	2) Notes	ILLINOIS 640 'Fertilizing and Watering Shade and Ornamental Trees' (subject-matter unit)
	3) Read subject-matter units	3) Notes	
	4) Group discussion - methods oftree fertilization-i.e punch bar, root feeders, surface application, tree spikes, rates of application, time of year to fertilize	4) Participation	CALIFORNIA 'Fertilizing Ornamental Plants' (filmstrip) 'Lawns & Groundcovers' (filmstrip)
	5) Demonstration - groundskeeper/instructor	5) Attendance	GEORGIA 'Fertilizing Ornamental Shrubs and Trees' (
	6) Complete Performance Objective	6) Performance Guide/ Instructor Approval	356 'Fertilizing Ornamentals' (slideset) KENTUCKY GG-60 'Applying Fertilizer to Trees' (module)

Gardening-Groundskeeping Unit: FERTILIZERS

Competency Task: FERTILIZE TREES - 2

Performance Objective	Learning Activities	Evaluation	Resources
			MICHIGAN E-786 'Fertilizing Shade and Ornamental Trees' (bulletin) E-933 'Liquid Fertilizers' (bulletin) Manufacturer's Recommendations Cooperative Extension Service Office Groundskeeper Performance Guide

Performance Guide FERTILIZE TREES

1. Determine type of fertilizer to be used-granular, slow release, spike, foliar, soluble, etc. - and method of application needed.
2. Determine amount of fertilizer needed for each plant according to size of plant, growth rate, number of times fertilized each season, etc.
3. Apply fertilizer in such a manner that the plant will not be injured by burning from fertilizer, will not have soft growth at end of season - susceptible to winter burn, and the pH level will not change to affect plant growth.
4. Obtain instructor approval on application rates before applying fertilizer to plants.
5. Return all equipment to storage area.

Lawns

- Prepare a Lawn Seed Bed, *page 57*
- Mow Lawns, *page 60*
- Aerate Lawns, *page 62*
- Revitalize Worn Spots in Lawns, *page 65*
- Fill Depressions in Lawns, *page 68*

Lawns

Gardening-Groundskeeping Unit: LAWNS

Competency Task: PREPARE A LAWN SEED BED

Performance Objective	Learning Activities	Evaluation	Resources
Given a soil analysis, fertilizer, and the necessary tools and equipment, prepare a lawn seed bed. For satisfactory performance, tillage depth should extend 5-7 inches with a smooth top surface and preparation must meet instructor approval.	1) Read appropriate selections from Master Resource List	1) Notes	Selections from Master Resource List ILLINOIS 651 'Steps to a Better Lawn' (slidefilm/slideset) 652 'Identifying Illinois Turfgrasses' (slidefilm/slideset) 653 'Seed Structure and Identification of Cool Season Grasses' (slidefilm/slideset) 5021 'Establishing a Lawn' (subject-matter unit) CALIFORNIA 1-204-131 'Lawns & Groundcovers' (filmstrip) KENTUCKY GG-8 'Preparing a Lawn Seed Bed' (module) MICHIGAN 'Lawn Establishment' (bulletin)
	2) View filmstrips/slides	2) Notes	
	3) Read subject-matter units	3) Notes	
	4) Group discussion - lawn seed bed preparation	4) Participation	
	5) Demonstration - groundskeeper/instructor	5) Attendance	
	6) Complete Performance Objective	6) Performance Guide/ Instructor Approval	

Gardening-Groundskeeping Unit: LAWNS

Competency Task: PREPARE A LAWN SEED BED - 2

Performance Objective	Learning Activities	Evaluation	Resources
			MICHIGAN - con't. 'Establishing a Lawn' (bulletin) NEW YORK 01.0506-01 'Growing and Caring for Turfgrass' (module) 01.0506-02 'Lawn Construction' (module) OHIO 'Lawn Care and Management' (slideset) Operator's Manual Groundskeeper Performance Guide

Performance Guide PREPARE A LAWN SEED BED

1. Remove debris.
2. Thoroughly till area until the correct contour and pitch have been attained.
3. Apply fertilizer (12-12-12) uniformly over entire area and lightly rake or till in.
4. Rake soil surface smooth.
5. Return all equipment to storage area.

Gardening-Groundskeeping Unit: LAWNS

Competency Task: MOW LAWNS

Performance Objective	Learning Activities	Evaluation	Resources
Given 1000 sq. ft. of Bluegrass lawn area, a rotary mower and operating instructions, mow the grass within the confines of the area. For satisfactory performance, the grass height should be within ±¼ inch of the recommendation of the cooperative extension service office recommendations and mowing must meet instructor approval.	1) Read appropriate selections from Master Resource List	1) Notes	Selections from Master Resource List ILLINOIS 651 'Steps to A Better Lawn' (slidefilm/slideset) KENTUCKY GG-54 'Mowing Grass' (module) OHIO 'Lawn Care and Management' (slideset and script) 'Turf Management' (manual) Operator's Manual Cooperative Extension Service Office Groundskeeper Performance Guide
	2) View filmstrips/slides	2) Notes	
	3) Read subject-matter units	3) Notes	
	4) Group discussion - various lawn mowing techniques	4) Participation	
	5) Demonstration - groundskeeper/instructor	5) Attendance	
	6) Complete Performance Objective	6) Performance Guide/ Instructor Approval	

MOW LAWNS

1. Set height of cut of mower blade - do not remove more than 1/3 of the grass blade height.
   a. dry weather - higher
   b. wet weather - lower

2. Determine starting point and directions of travel.

3. Change cutting patterns.

4. Mow grass within area. Caution: Watch for rocks, sticks, bottles, cans, and other debris which could cause injury to bystander. If possible keep discharge chute pointed away from people, buildings, walkways, streets, and cars.

5. Clean mower and return to storage area.

Gardening-Groundskeeping Unit: LAWNS

Competency Task: AERATE LAWNS

Performance Objective	Learning Activities	Evaluation	Resources
Given a compacted playing area and necessary tools, equipment and supplies, aerate sod which has been compacted. For satisfactory performance, the area must be aerated and the sod must be restored to an upright position for normal growth. Aerification must also meet instructor approval.	1) Read appropriate selections from Master Resource List	1) Notes	Selections from Master Resource List ILLINOIS 651 'Steps to a Better Lawn' (slidefilm/slideset) 5021 'Establishing a Lawn' (subject-matter unit) KENTUCKY GG-11 'Sowing Lawn' (module) GG-12 'Revitalizing and Aerating Sod' (module) NEW YORK 01.0506-02 'Lawn Construction' (module) OHIO 'Lawn Renovation and Re-establishment' (slideset and script) 'Lawn Care and Management' (slideset) 'Turf Management' (manual)
	2) View filmstrips/slides	2) Notes	
	3) Read subject-matter units	3) Notes	
	4) Group discussion - methods of aerating lawns, reasons for aerating	4) Participation	
	5) Demonstration - groundskeeper/instructor	5) Attendance	
	6) Complete Performance Objective	6) Performance Guide/ Instructor Approval	

Gardening-Groundskeeping Unit: LAWNS

Competency Task: AERATE LAWNS - 2

Performance Objective	Learning Activities	Evaluation	Resources
			Groundskeeper Performance Guide

Performance Guide AERATE LAWNS

1. Isolate area with barriers to prevent acitivity on the designated areas.

2. Aerate sod.
   - a. set equipment for operation
   - b. determine direction of travel
   - c. cover area completely with aerator
   - d. clear tines as necessary
   - e. replace broken tines, as necessary

3. Return ail equipment to storage area.

Gardening-Groundskeeping Unit: LAWNS

Competency Task: REVITALIZE WORN SPOTS IN LAWNS

Performance Objective	Learning Activities	Evaluation	Resources
Given a worn lawn area, the necessary tools, equipment and supplies, revitalize worn spots in the lawn area. For satisfactory performance, the area must be resodded, it must drain properly, and must meet instructor approval.	1) Read appropriate selections from Master Resource List	1) Notes	Selections from Master Resource List ILLINOIS 651 'Steps to A Better Lawn' (slidefilm/slideset) 5021 'Establishing a Lawn' (subject-matter unit) KENTUCKY GG-12 'Revitalizing and Aerating Sod' (module) GG-53 'Sodding Worn Spots in Lawns' (module) NEW YORK 01.0506-02 'Lawn Construction' (module) OHIO 'Lawn Renovation and Re-esta' blishment' (slideset and script) 'Lawn Care & Management' (slideset)
	2) View filmstrips/slides	2) Notes	
	3) Read subject-matter units	3) Notes	
	4) Group discussion - type of grass used, methods of revitalizing worn lawn areas	4) Participation	
	5) Demonstration - groundskeeper/instructor	5) Attendance	
	6) Complete Performance Objective	6) Performance Guide/ Instructor Approval	

Gardening-Groundskeeping Unit: LAWNS

Competency Task: REVITALIZE WORN SPOTS IN LAWNS - 2

Performance Objective	Learning Activities	Evaluation	Resources
			OHIO - con't. 'Turf Management' (manual) Groundskeeper Performance Guide

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REVITALIZE WORN SPOTS IN LAWNS

1. Isolate area with barriers to prevent activity on the designated area.

2. Remove dead grass and other debris.

3. Loosen compacted soil/sod with tiller or hand tools.

4. Fertilize work area (12-12-12)

5. Smooth and grade area for proper drainage.

6. Seeding
   a. reseed barren areas
   b. add needed water
   c. water regularly

7. Sodding
   a. carefully unroll sod and place pieces in staggered brick pattern
   b. join edges of sod firmly
   c. after all sod has been placed on area, roll area. Rolling should be done in 2 directions.
   d. thoroughly water sod as soon after rolling as possible.
   e. water sod regularly until rooted
   f. on sloped areas, take precautions to prevent sod from washing away before it has rooted.

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Gardening-Groundskeeping Unit: LAWNS

Competency Task: FILL DEPRESSIONS IN LAWNS

Performance Objective	Learning Activities	Evaluation	Resources
Given the necessary tools and topsoil, fill all holes and depressions in a lawn. For satisfactory performance, the topsoil applied to each depression must match the contour of the lawn area when packed, and must meet instructor approval.	1) Read appropriate selections from Master Resource List	1) Notes	Selections from Master Resource List ILLINOIS 627 'Planting, Protecting Existing Features, Drainage and Driveways' (slideset) KENTUCKY GG-5 'Hauling and Spreading Topsoil' (module) Groundskeeper Performance Guide
	2) View filmstrips/slides	2) Notes	
	3) Read subject-matter units	3) Notes	
	4) Demonstration - groundskeeper/instructor	4) Attendance	
	5) Complete Performance Objective	5) Performance Guide/ Instructor Approval	

Performance Guide FILL DEPRESSIONS IN LAWNS

1. Load wheelbarrow with topsoil
2. Locate holes or depressions in lawn.
3. Mark all holes and depressions.
4. Fill each hole with topsoil, and compact slightly to prevent washing and setting.
5. Rake topsoil to contour of areas.
6. Return all equipment to storage area.

Trees, Shrubs, Annuals and Perennials

- Transport Materials Purchased, *page 70*
- Construct Plant Storage Areas, *page 72*
- Water Plants, *page 74*
- Plant Bare Root Trees, *page 77*
- Transplant Trees, *page 79*
- Wrap Trees, *page 81*
- Brace Bare Root Trees, *page 83*
- Stake Trees, *page 85*
- Plant Annuals, *page 87*
- Plant Bulbs, *page 89*
- Remove Grass from Flower Bed Edges, *page 91*
- Remove Weeds and Grass from Flower Beds, *page 93*
- Apply Mulches, *page 95*
- Prune Trees and Shrubs, *page 97*
- Prune Hedges, *page 100*
- Treat Tree Wounds, *page 102*
- Treat Tree Cavities, *page 104*
- Brace Overloaded Limbs, *page 106*
- Remove Trees, *page 108*
- Remove Stumps, *page 110*

Trees, Shrubs, Annuals and Perennials

Gardening-Groundskeeping Unit: TREES, SHRUBS, ANNUALS, & PERENNIALS

Competency Task: TRANSPORT MATERIALS PURCHASED

Performance Objective	Learning Activities	Evaluation	Resources
Given a group of balled and burlapped, bareroot, container grown, deciduous and evergreen trees and shrubs, arrange to have them transported from a nursery to a holding shed. For satisfactory performance, the type of transportation provided must protect the items from dehydration and leaf, root, or limb damage, and meet instructor approval.	1) Read appropriate selections from Master Resource List	1) Notes	Selections from Master Resource List
	2) Read subject-matter units	2) Notes	KENTUCKY GG-73 'Purchasing and Transporting Plants, Equipment, and Supplies' (module)
	3) Group discussion - methods of transporting plant materials, use of tarps, anti-transpirants, possible plant damage and its prevention	3) Participation	Cooperative Extension Service Office Local Industry
	4) Group/Independent Project - industry, cooperative extension service office recommendations	4) Notes/Report findings	Performance Guide
	5) Field trip - local nursery shipping yard	5) Attendance	
	6) Complete Performance Objective	6) Performance Guide/ Instructor Approval	

1. Review list of items purchased.
2. Assign task to worker.
3. Instruct worker for inspecting and transporting purchased items.
   a. vehicle required for transportation of plants.
   b. route to and from nursery.
   c. pick-up point at nursery.
   d. examining and separating unhealthy plants.
   e. procedure for loading and unloading plants.
   f. use of tarps/anti-transpirants, or rope to tie limbs and prevent damage.
   g. sales receipt to be obtained.
4. Inspect transported plants for dehydration, leaf, root or limb damage.

Gardening-Groundskeeping Unit: TREES, SHRUBS, ANNUALS & PERENNIALS

Competency Task: CONTRUCT PLANT STORAGE AREAS

Performance Objective	Learning Activities	Evaluation	Resources
Given access to tools, materials and supplies construct a temporary holding area (lathe area) to protect plants until they are transplanted. For satisfactory performance, lathe area construction must follow performance guide outline and meet instructor approval.	1) Read appropriate selections from Master Resource List	1) Notes	Selections from Master Resource List
	2) View filmstrips/slides	2) Notes	KENTUCKY
	3) Read subject-matter units	3) Notes	GG-36 'Constructing Portable Shading Devices' (module)
	4) Group discussion - weather conditions from which to protect plants - methods of protecting plants	4) Participation	GG-33 'Constructing Plant Holding Arbors' (module) OHIO
	5) Field trip - holding areas at local nurseries/ garden centers	5) Attendance	AGDEX 9501 'Garden Center Worker Manual' (manual)
	6) Complete Performance Objective	6) Performance Guide/ Instructor Approval	Local Industry Performance Guide

Performance Guide CONTRUCT PLANT STORAGE AREAS

1. Determine type of plants to be shaded.
2. Determine weather conditiond from which to protect plants.
3. Determine type of material to use.
4. Take measurement for shading device
5. Lay out and cut materials to size.
6. Assemble materials.
7. Move plants into storage area until planting time.
8. Consider also:
    a. location of lathe area to other structures
    b. location of lathe area to water supply
    c. height of area, and walkways for worker movement
9. Return all materials and tools to storage area.

Gardening-Groundskeeping Unit: TREES, SHRUBS, ANNUALS & PERENNIALS

Competency Task: WATER PLANTS

Performance Objective	Learning Activities	Evaluation	Resources
Given a group of plants and portable irrigation equipment, maintain sufficient moisture around the plants for one month. For satisfactory performance, finished work must be approved by the instructor using the instructor checklist.	1) Read appropriate selections from Master Resource List	1) Notes	Selections from Master Resource List
	2) View filmstrips/slides	2) Notes	ILLINOIS 632 'Water Features, Irrigation Materials' (slideset)
	3) Read subject-matter units	3) Notes	
	4) Group discussion - plant types, soil conditions, underwater, overwatering	4) Participation	KENTUCKY GG-51 'Watering Plants' (module)
	5) Demonstration - groundskeeper/instructor	5) Attendance	Groundskeeper Performance Guide
	6) Complete Performance Objective	6) Performance Guide/ Instructor Checklist	Instructor Checklist

1. Determine soil type and slope.
2. Determine amount of water needed for plants.
3. Determine if plants are established or newly planted.
4. Check equipment for proper working order.
5. Set up watering equipment for proper coverage.
6. Turn on water and check for runoff.
7. Regulate water flow.
8. Water thoroughly to prevent shallow root development.
9. Check area frequently to maintain amount of water.
10. Return equipment to storage area.

Instructor Checklist WATER PLANTS

ACCEPTABLE

1. Plants were watered only when necessary.
2. Plants were watered thoroughly to prevent shallow root development.
3. Water was applied around plants at rate of absorption by soil.
4. Moisture level of soil around plants was always 6-8 inches.
5. Plants were watered early-mid morning.

Gardening-Groundskeeping Unit: TREES, SHRUBS, ANNUALS, & PERENNIALS

Competency Task: PLANT BAREROOT TREES

Performance Objective	Learning Activities	Evaluation	Resources
Given a small bare root tree and access to planting tools and equipment, transplant the tree. For satisfactory performance, the tree should be transplanted so roots will not be damaged or restricted from their natural lie. When settled, the filled hole should be level with the contour of the surrounding soil and transplanting must meet instructor approval.	1) Read appropriate selections from Master Resource List	1) Notes	Selections from Master Resource List ILLINOIS 641-1.1 'Mechanical Digging of Trees and Shrubs' (slidefilm/slideset) 641-1.2 'Hand Digging of Trees and Shrubs' (slidefilm/slideset) 5002 'Transplanting Shade Trees' (subject-matter unit) KENTUCKY GG-58 'Transplanting Trees' (module) Groundskeeper Performance Guide
	2) View filmstrips/slides	2) Notes	
	3) Read subject-matter units	3) Notes	
	4) Group discussion - methods of planting bare root trees	4) Participation	
	5) Demonstration - groundskeeper/instructor	5) Attendance	
	6) Complete Performance Objective	6) Performance Guide/ Instructor Approval	

Performance Guide PLANT BARE ROOT TREES

1. Determine species of tree.
2. Remove plant from packaging.
3. Check for damaged roots, remove broken roots.
4. Dig hole 6 inches deeper and 6 inches wider than plant's root system.
5. Place plant in hole to same depth as previously grown.
6. Spread roots into natural growing position.
7. Fill soil around roots and in hole.
8. Tamp soil until firm.
9. Berm (dish) to hold water.
10. Water plant.
11. After water has settled, fill hole with soil to level of surrounding soil surface.
12. Wrap trunk of tree to protect from weather, if applicable.
13. Stake tree to protect from wind damage.
14. Prune tree, if necessary.

Gardening-Groundskeeping Unit: TREES, SHRUBS, ANNUALS & PERENNIALS

Competency Task: TRANSPLANT TREES

Performance Objective	Learning Activities	Evaluation	Resources
Given a shovel, burlap, pinning nails, or needle, thread, and twine, move a small tree to a new location. For satisfactory performance, the plant must be set at the same depth as the previous location, the plant leaves, branches, or roots must not be damaged, and transplanting must meet instructor approval.	1) Read appropriate selections from Master Resource List	1) Notes	Selections from Master Resource List ILLINOIS 641-1.1 'Mechanical Digging of Trees and Shrubs' (slidefilm/slideset) 641-1.2 'Hand Digging of Trees and Shrubs' (slidefilm/slideset) 5002 'Transplanting Shade Trees' (subject-matter unit) KENTUCKY GG-58 'Transplanting Trees' (module) Groundskeeper Performance Guide
	2) View filmstrips/slides	2) Notes	
	3) Read subject-matter units	3) Notes	
	4) Group discussion - hand vs. mechanical digging of trees, burlapping and tying techniques	4) Participation	
	5) Demonstration - groundskeeper/instructor	5) Attendance	
	6) Complete Performance Objective	6) Performance Guide/ Instructor Approval	

Performance Guide TRANSPLANT TREES

1. Determine species of tree.
2. Soak soil around tree with water before digging (if ground is firm)
3. Determine size of rootball.
4. Cut trench around outside of rootball to make room for undercutting roots.
5. Cut under rootball with shovel.
6. Wrap burlap around rootball.
7. Pin or sew burlap around lower tree trunk.
8. Tie burlap around remaining portion of rootball.
9. Remove rootball from hole.
10. Prepare new site and set in place.
11. Water tree regularly.
12. Prune tree back after transplanting to reduce shock.
13. Return all tools and equipment to storage area.

Gardening-Groundskeeping Unit: TREES, SHRUBS, ANNUALS, & PERENNIALS

Competency Task: WRAP TREES

Performance Objective	Learning Activities	Evaluation	Resources
Given a thin-barked tree and wrapping materials, wrap the materials, on the tree to protect it from winter weather. For satisfactory performance, all bark on the trunk area as high as 5 feet from the ground, or up to the lower limbs should be completely covered, and wrapping must meet instructor approval.	1) Read appropriate selections from Master Resource List	1) Notes	Selections from Master Resource List ILLINOIS 5002 'Transplant Shade Trees' (subject-matter unit) KENTUCKY GG-57 'Wrapping Trees or Shrubs to Protect From Weather' (subject-matter unit) Groundskeeper Performance Guide
	2) Read subject-matter units	2) Notes	
	3) Group discussion - wrapping materials, reasons to wrap trees, possible damage to unwrapped trees	3) Notes	
	4) Field trip- location of newly planted trees, materials used, and method of wrapping	4) Attendance	
	5) Demonstration - groundskeeper/instructor	5) Attendance	
	6) Complete Performance Objective	6) Performance Guide/ Instructor Approval	

Performance Guide WRAP TREES

1. Begin a bottom of tree trunk and wrap around in a spiral form (so water runs down). If burlap is used, fold edges under.
2. After wrapping is completed, take string and wrap in opposite direction and tie to hold wrapping in place.
3. Return unused materials to storage area.

Gardening-Groundskeeping Unit: TREES, SHRUBS, ANNUALS & PERENNIALS

Competency Task: BRACE BARE ROOT TREES

Performance Objective	Learning Activities	Evaluation	Resources
Given a wooden stake, sledge hammer and tying materials, brace a newly planted bare root tree which is 2 inches or less in diameter. For satisfactory performance, the stake should not damage bark and must prevent leaning when 10 - 20 pounds of force is applied halfway up the tree trunk. Bracing must meet instructor approval.	1) Read appropriate selections from Master Resource List	1) Notes	Selections from Master Resource List
	2) Read subject-matter units	2) Notes	ILLINOIS
	3) Demonstration - groundskeeper/instructor	3) Attendance	5002 'Transplanting Shade Trees' (subject-matter unit)
	4) Complete Performance Objective	4) Performance Guide/ Instructor Approval	KENTUCKY GG-59 'Bracing Trees' (module) Groundskeeper Performance Guide

Performance Guide

BRACE BARE ROOT TREES

1. Determine length of stake.
2. Cut stake to length.
3. Drive stake 2' into ground, 6 inches from tree trunk on windward side of tree. After stake has been driven into ground, its top should be about midpoint up tree trunk.
4. Tie tree to stake in three placed with leather, rope, or other material which will not cut the bark of tree. Trunk should stand straight and may be wrapped, then tied with wire.
5. Return unused materials to storage area.

Gardening-Groundskeeping Unit: TREES, SHRUBS, ANNUALS & PERENNIALS

Competency Task: STAKE TREES

Performance Objective	Learning Activities	Evaluation	Resources
Given guy wires, rubber hose, stakes, and sledge hammer, brace a newly planted B & B tree which is more than 2" in diameter. For satisfactory performance, the brace must prevent leaning when 20-30 pounds of force is applied above the midpoint of the tree trunk, the guy wires must not damage the bark or the tree trunk or branches during windy periods, and staking must meet instructor approval.	1) Read appropriate selections from Master Resource List 2) Read subject-matter units 3) Demonstration - groundskeeper/instructor 4) Complete Performance Objective	1) Notes 2) Notes 3) Attendance 4) Performance Guide/ Instructor Approval	Selections from Master Resource List ILLINOIS 5002 'Transplanting Shade Trees' (subject-matter unit) KENTUCKY GG-59 'Bracing Trees' (module) Groundskeeper Performance Guide

Performance Guide STAKE TREES

1. Tie three guy wires to tree trunk at point where branches begin, inserting wires through sections of hose at points where wire would contact tree bark.

2. Cut stakes to length.

3. Drive stakes into ground around tree at distances which form an equilateral triangle. Leave enough stake above ground to anchor guy wires.

4. Anchor guy wires to stakes so tree will stand upright.

5. Return tools and equipment to storage area.

Gardening-Groundskeeping Unit: TREES, SHRUBS, ANNUALS & PERENNIALS

Competency Task: PLANT ANNUALS

Performance Objective	Learning Activities	Evaluation	Resources
Given annual plants in containers, a seedbed, water supply, and access to planting tools, plant annual flowers. For satisfactory performance, the leaves, stems and roots of the plants should not be broken during the planting process, regular visual inspections should show the plants have not wilted, and planting must meet instructor approval.	1) Read appropriate selections from Master Resource List	1) Notes	Selections from Master Resource List ILLINOIS 601 'Garden Flowers - Annuals, Pt. 1' (slidefilm/slideset) 602 'Garden Flowers - Annuals, Pt. 2' (slidefilm/slideset) KENTUCKY GG-50 'Planting and Mulching Flowers and Bulbs' (modules) OHIO 'Annuals' (slideset and script) Seed Catalogues Groundskeeper Performance Guide
	2) View filmstrips/slides	2) Notes	
	3) Read subject-matter units	3) Notes	
	4) Review seed catalogues	4) Notes/Instructor quiz annuals identification	
	5) Group/Independent Project - design flower bed on school grounds	5) Notes/bed design	
	6) Demonstration - groundskeeper/instructor	6) Attendance	
	7) Complete Performance Objective	7) Performance Guide/ Instructor Approval	

1. Take and analyze soil samples prior to planting area.
2. Check soil for proper moisture and mixture, using nurseryman's criteria.
3. Dig hole about twice width of rootball, and slightly deeper than rootball.
4. Remove plant from container - exception: peat pots, Jiffy 7's, etc.)
5. Set plant into hole and fill in under rootball and around sides of rootball. Top of rootball should be flush with contour of seedbed.
6. Soak filled hole with water.
7. Water frequently until established.
8. Transplant on cloudy day in evening, or provide shade.
9. Return tools and equipment to storage area.

Gardening-Groundskeeping Unit: TREES, SHRUBS, ANNUALS & PERENNIALS

Competency Task: PLANT BULBS

Performance Objective	Learning Activities	Evaluation	Resources
Given access to planting tools and supplies, and various spring-flowering bulbs, plant the bulbs in a prepared bed. For satisfactory performance, the bulbs must be planted at the correct depth and set with the pointed end up, and meet instructor approval.	1) Read appropriate selections from Master Resource List	1) Notes	Selections from Master Resource List KENTUCKY GG-50 'Planting and Mulching Flowers and Bulbs' (module) Bulb Catalogues Groundskeeper Performance Guide
	2) Read subject-matter units	2) Notes	
	3) Review bulb catalogues for bulb types/planting methods and depths	3) Notes	
	4) Group/Independent Project - design of bulb garden bed	4) Notes/Bed design	
	5) Demonstration - groundskeeper/instructor	5) Attendance	
	6) Complete Performance Objective	6) Performance Guide/ Instructor Approval	

Performance Guide PLANT BULBS

1. Determine type of bulb(s) to be planted and the required planting depth(s).
2. Remove bulb from package or bed, taking generous amount of soil with each bulb.
3. Dig hole to required depth for bulb using bulb planter or shovels.
4. Place bulb in hole with pointed end in upward position.
5. Fill hole with soil.
6. Soak filled hole with water.
7. Clean tools and equipment and return to storage.

Gardening-Groundskeeping Unit: TREES, SHRUBS, ANNUALS & PERENNIALS

Competency Task: REMOVE GRASS FROM FLOWER BED EDGES

Performance Objective	Learning Activities	Evaluation	Resources
Given the necessary tools, remove grass from the edge of flower beds. For satisfactory performance, plants and shrubs must not be damaged and the edge line must be within 1 inch of the original line, and must meet instructor approval.	1) Read appropriate selections from Master Resource List	1) Notes	Selections from Master Resource List KENTUCKY
	2) Read subject-matter units	2) Notes	GG-52 'Removing Weeds and Grass from Flower Beds' (module)
	3) Group discussion - edging tools and process	3) Participation	
	4) Demonstration - groundskeeper/instructor	4) Attendance	Groundskeeper Performance Guide
	5) Complete Performance Objective	5) Performance Guide/ Instructor Approval	

Performance Guide REMOVE GRASS FROM FLOWER BED EDGES

1. Stretch string along flower bed edge approximately 1 inch above ground level.
2. Using an edger with a blade, or a sod lifter, make a vertical cut along edge, following line of string.
3. Dispose of grass and remove string.
4. Return all tools and equipment to storage area.

Gardening-Groundskeeping Unit: TREES, SHRUBS, ANNUALS & PERENNIALS

Competency Task: REMOVE WEEDS AND GRASS FROM FLOWER BEDS

Performance Objective	Learning Activities	Evaluation	Resources
Given a hoe, weeder, or chemical methods, remove unecessary weeds and grass from an unmulched flower bed. For satisfactory performance, the topsoil must be left smooth and flowers should not be bruised, uprooted, or damaged by chemicals, and must meet instructor approval.	1) Read appropriate selections from Master Resource List	1) Notes	Selections from Master Resource List
	2) Read subject-matter units	2) Notes	KENTUCKY GG-52 'Removing Weeds and Grass from Flower Beds' (module)
	3) View filmstrips/slides	3) Notes	
	4) Group discussion - chemical weed removal	4) Participation	OHIO
	5) Demonstration - groundskeeper/instructor	5) Attendance	'Weed Control, Cultural and Chemical' (manual)
	6) Complete Performance Objective	6) Performance Guide/ Instructor Approval	Groundskeeper Performance Guide

REMOVE WEEDS AND GRASS FROM FLOWER BEDS

1. Determine hardness of soil. If soil is hard, soften with sprinkled water.
2. Take shallow, short strokes with hoe to uproot weeds and grass.
3. Using hoe, take weeds and grass to edge of bed.
4. Dispose of weeds and grass.
5. Add new soil in holes created by uprooting weeds and grass.
6. Rake surface of flower bed with hoe or rake until smooth.
7. Clean hoe and return to storage.

Gardening-Groundskeeping Unit: TREES, SHRUBS, ANNUALS & PERENNIALS

Competency Task: APPLY MULCHES

Performance Objective	Learning Activities	Evaluation	Resources
Given a bed of seedlings, mulching materials, and necessary tools, add mulch around plants to a depth of 4-6 inches. For satisfactory performance, mulch must be distributed evenly and meet instructor approval.	1) Read appropriate selections from Master Resource List	1) Notes	Selections from Master Resource List ILLINOIS 4052 'Understanding Soils' (subject-matter unit)
	2) Read subject-matter units	2) Notes	KENTUCKY GG-3 'Preparing and Applying Compost' (module)
	3) Group discussion - types of mulches, uses of mulches	3) Participation	GG-50 'Planting and Mulching Flowers and Bulbs' (module)
	4) Demonstration - groundskeeper/instructor	4) Attendance	Groundskeeper
	5) Complete Performance Objective	5) Performance Guide/ Instructor Approval	Performance Guide

Performance Guide APPLY MULCHES

1. Determine type of mulch to be used (i.e. bark materials. stone, poly, straw, hay)
2. Spread mulch over area to depth of 4-6 inches (exception: poly)
3. Add excess mulch to allow for settling (exception: poly)
4. Smooth top of mulch, if necessary.
5. Return tools and equipment to storage area.

Gardening-Groundskeeping Unit: TREES, SHRUBS, ANNUALS & PERENNIALS

Competency Task: PRUNE TREES AND SHRUBS

Performance Objective	Learning Activities	Evaluation	Resources
Given trees and shrubs that have been unattended for several years, and the necessary pruning tools, determine whether the plants should be pruned for shaping, stimulation and/or rejuvenation, and prune accordingly. For satisfactory performance, each plant must be pruned according to its needs, all pruning cuts must be made and treated properly, and all pruning must meet instructor approval.	1) Read appropriate selections from Master Resource List	1) Notes	Selections from Master Resource List ILLINOIS 615 'Objectives of Pruning Deciduous Trees' (slidefilm/slideset) 643 'Pruning Evergreens' (slidefilm/slideset) 644 'Pruning Deciduous Shrubs (slidefilm/slideset) 645 'Pruning Flowering Trees' (slidefilm/slideset) 5004 'Pruning Shade Trees' (subject-matter unit) KENTUCKY GG- 61 'Pruning and Trimming Trees' (module) GG-64 'Pruning Shrubs to Provide Stimulation and Rejuvenation' (module) GG-65 'Pruning Shrubs for Shaping' (module)
	2) View filmstrips/slides	2) Notes	
	3) Read subject-matter units	3) Notes	
	4) Group discussion - types of pruning, pruning cuts, treating pruning wounds	4) Participation	
	5) Demonstration - groundskeeper/instructor	5) Attendance	
	6) Complete Performance Objective	6) Performance Guide/ Instructor Approval	

Gardening-Groundskeeping Unit: TREES, SHRUBS, ANNUALS & PERENNIALS

Competency Task: PRUNE TREES AND SHRUBS - 2

Performance Objective	Learning Activities	Evaluation	Resources
			KENTUCKY - con't. GG-66 'Pruning Hedges for Shaping' (module) NEW YORK 01.0501-02 'Pruning Ornamental (module) OHIO 'Pruning of Landscape Ornamental' (slideset and script) WISCONSIN 590 'Deciduous Shrubs' (bulletin) 608 'Shade Trees - Pruning and Care' (bulletin) Groundskeeper Performance Guide

1. Determine species of trees and shrubs.
2. Inspect tools and/or equipment to determine if they are in proper working condition and are sharp and clean.
3. Determine if trees and shrubs need to be pruned for shaping, stimulation, and/or rejuvenation purposes.
4. Determine proper shape of trees and shrubs.
5. Select proper tools for pruning.
6. Remove all dead, diseased, or injured branches.
7. Remove wayward branches.
8. Remove clusters and single growth which extend beyond desired shape.
9. Seal all large cuts with tree wound dressing.
10. Dispose of prunings as directed by instructor.
11. Return tools and equipment to storage area.

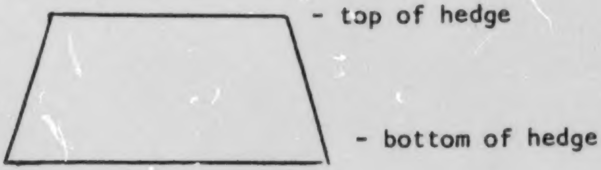
Gardening-Groundskeeping Unit: TREES, SHRUBS, ANNUALS & PERENNIALS

Competency Task: PRUNE HEDGES

Performance Objective	Learning Activities	Evaluation	Resources
Given a row of established hedge plants in need of shaping, prune the hedges to desired size using electric and hand shears. For satisfactory performance, the hedge should be shaped to permit light to stimulate growth on all areas of the hedge, and must meet instructor approval.	1) Read appropriate selections from Master Resource List	1) Notes	Selections from Master Resource List ILLINOIS 644 'Pruning Deciduous Shrubs' (filmstrip/slideset) KENTUCKY GG-66 'Pruning Hedges for Shaping' (module) NEW YORK 01.0501-02 'Pruning Ornamentals' (module) OHIO 'Pruning of Landscape Ornamentals' (slideset and script) WISCONSIN 590 'Deciduous Shrubs - Pruning and Care' (bulletin) Groundskeeper Performance Guide
	2) View filmstrips/slides	2) Notes	
	3) Read subject-matter units	3) Notes	
	4) Demonstration - groundskeeper/instructor	4) Attendance	
	5) Complete Performance Objective	5) Performance Guide/ Instructor Approval	

PRUNE HEDGES

1. Determine species of hedge plants.
2. Check tools and equipment for proper condition and sharpness.
3. Determine desired size and shape of hedge plants. Hedge should be cut slightly undersize.
4. Remove all growth to accomplish pruposes of pruning.
5. Leave hedge wider at bottom for maximum sun exposure.



Gardening-Groundskeeping Unit: TREES, SHRUBS, ANNUALS & PERENNIALS

Competency Task: TREAT TREE WOUNDS

Performance Objective	Learning Activities	Evaluation	Resources
Given a tree with freshly pruned branches, apply a coat of tree wound dressing to all exposed pruned areas. For satisfactory performance, all exposed cuts over 2 inches in diameter should be treated and must meet instructor approval.	1) Read appropriate selections from Master Resource List	1) Notes	Selections from Master Resource List ILLINOIS
	2) View filmstrips/slides	2) Notes	615 'Objectives of Pruning Deciduous Trees' (slidefilm/slideset)
	3) Read subject-matter units	3) Notes	
	4) Group discussion - types of tree wound paints and methods of application	4) Participation	5004 'Pruning Shade Trees' (subject-matter unit) KENTUCKY
	5) Demonstration - groundskeeper/instructor	5) Attendance	GG-61 'Pruning and Trimming Trees' (module)
	6) Complete Performance Objective	6) Performance Guide/ Instructor Approval	Groundskeeper Performance Guide

Performance Guide TREAT TREE WOUNDS

1. Clean and smooth cut areas with a pruning knife or chisel.
2. Apply tree wound dressing, covering all exposed areas.
3. Check wounds periodically to see if a second application of dressing is needed.
4. Return tools and equipment to storage area.

Gardening-Groundskeeping Unit: TREES, SHRUBS, ANNUALS & PERENNIALS

Competency Task: TREAT TREE CAVITIES

Performance Objective	Learning Activities	Evaluation	Resources
Given a tree with a cavity, and the necessary tools and equipment, treat the cavity. For satisfactory performance, the entire cavity must be cleaned of debris and rotted wood, filled if necessary, treated with tree wound dressing, and meet instructor approval.	1) Read appropriate selections from Master Resource List	1) Notes	Selections from Master Resource List KENTUCKY GG-62 'Treating Cavities in Trees' (module) Groundskeeper Performance Guide
	2) View filmstrips/slides	2) Notes	
	3) Read subject-matter units	3) Notes	
	4) Group discussion - treating tree cavities, materials used as fillers	4) Participation	
	5) Demonstration - groundskeeper/instructor	5) Attendance	
	6) Complete Performance Objective	6) Performance Guide/ Instructor Approval	

Performance Guide TREAT TREE CAVITIES

1. Determine extend of cavity.
2. Remove diseased or damaged bark and wood with hammer and chisel.
3. Smooth damaged area with chisel.
4. Fill cavity, if necessary.
5. Clean and smooth cut areas with pruning knife.
6. Apply tree paint, covering all exposed areas.
7. Return tools and equipment to storage area.

Gardening-Groundskeeping Unit: TREES, SHRUBS, ANNUALS & PERENNIALS

Competency Task: BRACE OVERLOADED LIMBS

Performance Objective	Learning Activities	Evaluation	Resources
Given pliers, cable, brace and bit, eyebolts, and a wrench, brace a v-crotch on a tree. For satisfactory performance, the cable must not damage the tree bark during windy periods, no splitting of the crotch must occur during periods of branch overload, and must meet instructor approval.	1) Read appropriate selections from Master Resource List	1) Notes	Selections from Master Resource List
	2) Read subject-matter units	2) Notes	KENTUCKY GG-59 'Bracing Trees' (module)
	3) Group discussion - reasons for bracing trees, various materials used in bracing process	3) Participation	Groundskeeper Performance Guide
	4) Demonstration - groundskeeper/instructor	4) Attendance	
	5) Complete Performance Objective	5) Performance Guide/ Instructor Approval	

Performance Guide BRACE OVERLOADED LIMBS

1. Determine best location of brace.
2. Drill holes in limbs for eyebolts.
3. Fasten eyebolt through each limb parallel to direction of cable pull.
4. Fasten a steel cable to each eyebolt and tighten until snug.
5. Prune tree if necessary to control future overload.
6. Clean equipment and return to storage.

Gardening-Groundskeeping Unit: TREES, SHRUBS, ANNUALS & PERENNIALS

Competency Task: REMOVE TREES

Performance Objective	Learning Activities	Evaluation	Resources
Given a tree 6 inches or less in diameter, remove the tree using a shovel, ax, chains, and a front end loader tractor. For satisfactory performance, the trunk portion should be removed completely from the ground and removal process must meet instructor approval.	1) Read appropriate selections from Master Resource List	1) Notes	Selections from Master Resource List
	2) Read subject-matter units	2) Notes	KENTUCKY GG-63 'Removing Dead and Unwanted Trees' (module)
	3) Demonstration - groundskeeper/instructor	3) Attendance	Groundskeeper
	4) Complete Performance Objective	4) Performance Guide/ Instructor Approval	Performance Guide

REMOVE TREES

1. Remove dirt from around tree or stump with shovel.
2. Cut tap roots and large fibrous roots.
3. Place chains around stump or base of tree.
4. Pull out tree or stump with chain and tractor.
5. Dispose of tree as indicated by instructor.
6. Return all tools and equipment to storage area.

Gardening-Groundskeeping Unit: TREES, SHRUBS, ANNUALS & PERENNIALS

Competency Task: REMOVE STUMPS

Performance Objective	Learning Activities	Evaluation	Resources
Given a stump 8 inches or less in diameter and a stump grinder, remove the stump. For satisfactory performance, no wood particles should remain visible at ground level and removal must meet instructor approval.	1) Read appropriate selections from Master Resource List	1) Notes	Selections from Master Resource List **KENTUCKY** GG-63 'Removing Dead and Unwanted Trees' Groundskeeper Performance Guide
	2) Read subject-matter units	2) Notes	
	3) Demonstration - groundskeeper/instructor	3) Attendance	
	4) Review operator's manual for grinder operation	4) Notes	
	5) Complete Performance Objective	5) Performance Guide/ Instructor Approval	

Performance Guide REMOVE STUMPS

1. Perform service check on stump grinder.
2. Determine depth of stump.
3. Start grinder, using manufacturer's instructions.
4. Place grinder over stump and operate machine according to instructions.
5. Remove chips from surrounding area.
6. Fill depression with topsoil and pack slightly.
7. Return all tools and equipment to storage area.

Pesticides

- Store Pesticides, *page 112*
- Dispose of Pesticide Containers, *page 115*
- Check for Insect and Disease Problems, *page 118*
- Compile Information to Purchase Pesticides, *page 120*
- Apply Pesticides, *page 123*
- Apply Pesticides to Disease or Insect Infested Plants, *page 125*
- Apply Herbicides, *page 127*

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Pesticides

Gardening-Groundskeeping Unit: PESTICIDES

Competency Task: STORE PESTICIDES

Performance Objective	Learning Activities	Evaluation	Resources
Given ten agricultural pesticide containers with labels intact, list accurately the recommendations for storing the chemicals. For satisfactory performance, the list must follow the performance guide outline, EPA regulations, and meet instructor approval.	1) Read appropriate selections from Master Resource List	1) Notes	Selections from Master Resource List ILLINOIS 1108-1.1 'Understanding and Safe Use of Pesticides' (slidefilm/slideset) 1108-1.2 'Selecting and Handling Pesticides Safely' (slidefilm/slideset) 4045a 'Handling and Using Pesticides Safely' (subject-matter unit) KENTUCKY GG-68 'Purchasing and Storing Chemical Supplie (module) WISCONSIN 150 'Understanding Pesticide Labels' (bulletin) Agricultural Chemical Catalogues EPA Regulations
	2) View filmstrips/slides	2) Notes	
	3) Read subject-matter units	3) Notes	
	4) Group discussion - pesticide storage, EPA regulations	4) Participation	
	5) Demonstration - groundskeeper/instructor	5) Attendance	
	6) Complete Performance Objective	6) Performance Guide/ Instructor Approval	

Gardening-Groundskeeping Unit: PESTICIDES

Competency Task: STORE PESTICIDES - 2

Performance Objective	Learning Activities	Evaluation	Resources
			Groundskeeper Performance Guide

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Performance Guide STORE PESTICIDES

1. Review materials on storing agricultural pesticides.
2. Read labels on pesticide packages to determine storage procedures.
3. Arrange pesticides used by class/greenhouse in storage area according to package directions, and EPA storage regulations.
4. Have instructor approve storage procedures used.

Gardening-Groundskeeping Unit: PESTICIDES

Competency Task: DISPOSE OF PESTICIDE CONTAINERS

Performance Objective	Learning Activities	Evaluation	Resources
Given several empty pesticide containers, dispose of each. For satisfactory performance, disposal must be according to instructions provided on the container, according to state and federal EPA standards, and must meet instructor approval.	1) Read appropriate selections from Master Resource List	1) Notes	Selections from Master Resource List ILLINOIS 1108-1.1 'Understanding and Safe Use of Pesticides' (slidefilm/slideset) 1108-1.2 'Selecting and Handling Pesticides' (slidefilm/slideset) 4045a 'Handling and Using Pesticides Safely' (subject-matter unit) KENTUCKY GG-68 'Purchasing and Storing Chemical Supplies' (module) OKLAHOMA 'Principles of Pesticide Use, Handling, and Applicatio (teacher guide/student manual WISCONSIN 150 'Understanding Pesticide Labels' (bulletin)
	2) View filmstrips/slides	2) Notes	
	3) Read subject-matter units	3) Notes	
	4) Group discussion - EPA regulations, proper disposal of various types of containers	4) Participation	
	5) Demonstration - groundskeeper/instructor	5) Attendance	
	6) Complete Performance Objective	6) Performance Guide/ Instructor Approval	

Gardening-Groundskeeping Unit: PESTICIDES

Competency Task: DISPOSE OF PESTICIDE CONTAINERS - 2

Performance Objective	Learning Activities	Evaluation	Resources
			EPA Regulations Label Instructions Groundskeeper Performance Guide

1. Determine type of pesticide being disposed, and state/federal EPA regulations.
2. Neutralize remaining chemical, if possible, following label directions.
3. Puncture or crush container (except aerosol).
4. Follow manufacturer's and EPA directions for disposal of container.

Gardening-Groundskeeping Unit: PESTICIDES

Competency Task: CHECK FOR INSECT AND DISEASE PROBLEMS

Performance Objective	Learning Activities	Evaluation	Resources
Given shrubs, flowers, or lawn areas, inspect to determine if insect and/or disease problems are present. For satisfactory performance, findings must be verified by instructor.	1) Read appropriate selections from Master Resource List	1) Notes	Selections from Master Resource List ILLINOIS 1108-2.2 'Identifying Common Insect Pests' (slidefilm/slideset) 5016 'Identifying and Controlling Lawn Insects' (subject-matter unit) GEORGIA 'Insects of Flowers and Ornamentals' (slideset/tape) OHIO 'Insect and Insect-like Pests of Landscape Ornamentals (slideset and script) 'Some Common Types of Insects' (subject-matter unit) Groundskeeper Performance Guide
	2) View filmstrips/slides	2) Notes	
	3) Read subject-matter units	3) Notes	
	4) Group discussion - common insects/diseases to the area	4) Participation	
	5) Demonstration - groundskeeper/instructor	5) Attendance	
	6) Complete Performance Objective	6) Performance Guide/ Instructor Approval	

1. Check overall appearance of plant or lawn area. Wilting or discoloring of leaves, branches or lawn areas may indicate presence of harmful insects or diseases.
2. Check upper and lower surfaces of leaves.
3. Check individual branches.
4. Check stem.
5. Check grass blades and roots.
6. Check soil around and underneath plants.
7. If insect/disease signs exist, a portion of the affected area might be removed for examination.
8. Have instructor verify findings.

Gardening-Groundskeeping Unit: PESTICIDES

Competency Task: COMPILE INFORMATION TO PURCHASE PESTICIDES

Performance Objective	Learning Activities	Evaluation	Resources
Given a description of a landscaped area, soil test results, the objectives of the spray plan (curative or preventative), and a budget, compile the necessary information for purchasing pesticides for trees, shrubs, and lawns. For satisfactory performance, the written information must include, and will be check for correct brand names, item quantities, and suppliers name and address.	1) Read appropriate selections from Master Resource List	1) Notes	Selections from Master Resource List ILLINOIS 1108-1.2 'Understanding and Safe Use of Pesticides' (slidefilm/slideset) 1108-1.2 'Selecting and Handling Pesticides' (slidefilm/slideset) KENTUCKY GG-68 'Purchasing and Storing Chemical Supplies' (module) MICHIGAN E-944 'Pesticides for Ornamentals' (bulletin) WISCONSIN 150 'Understanding Pesticide Labels' (bulletin) Spray Plan Agricultural Chemical Catalogu
	2) View filmstrips/slides	2) Notes	
	3) Read subject-matter units	3) Notes	
	4) Group discussion - curative vs. preventative spray plans, licensing laws	4) Participation	
	5) Demonstration - groundskeeper/instructor	5) Attendance	
	6) Complete Performance Objective	6) Performance Guide/ Instructor Approval	

Gardening-Groundskeeping Unit: PESTICIDES

Competency Task: COMPILE INFORMATION TO PURCHASE PESTICIDES - 2

Performance Objective	Learning Activities	Evaluation	Resources
			Groundskeeper Performance Guide

Performance Guide COMPILE INFORMATION TO PURCHASE PESTICIDES

1. Determine whether spray program is preventative or curative.
2. Review description of landscaped area.
3. Locate chemical manufacturer's reference literature.
4. List shrubs, trees, and lawn areas on sheet.
5. Review cooperative extension service office literature for common insects and diseases, recommended chemicals for controlling these insects and diseases, and chemicals application rates for each shrub, tree, and lawn listed previously.
6. List chemical type and application rate for each tree, shrub, and lawn listed.
7. List chemicals to be purchased for each type tree, shrub, and lawn.
    a. brand name
    b. item quantities
    c. name, address, or location of supplier
    d. form of chemical
    e. approximate shelf life of chemical.
8. Compute costs for each type chemical to be purchased and list totals.
9. Present plan to instructor for review.
10. Select most effective and safest chemical.

Gardening-Groundskeeping Unit: PESTICIDES

Competency Task: APPLY PESTICIDES

Performance Objective	Learning Activities	Evaluation	Resources
Given a pesticide, apply the pesticide to an insect-infested lawn area. For satisfactory performance, the amount of pesticide applied should be within ±5 percent of the amount recommended for the lawn size and insect infestation, the recommended mixture should be used, all safety rules observed, uniform coverage should be evident, and application must meet instructor approval.	1) Read appropriate selections from Master Resource List	1) Notes	Selections from Master Resource List ILLINOIS 1108-1.3 'Calibrating and Applying Pesticides Safely' (slidefilm/slideset) GEORGIA 'Applying Pesticides' (subject-matter unit) KENTUCKY GG-70 'Applying Chemicals With a Tractor-Mounted Sprayer' (module) GG-72 'Applying Chemicals to Diseased Plants' (module) OKLAHOMA 'Principles of Pesticides Use, Handling, and Application' (teacher guide/student manual) Groundskeeper Performance Guide
	2) View filmstrips/slides	2) Notes	
	3) Read subject-matter units	3) Notes	
	4) Group discussion - compatibility of pesticides	4) Participation	
	5) Demonstration - groundskeeper/instructor	5) Attendance	
	6) Complete Performance Objective	6) Performance Guide/ Instructor Approval	

Performance Guide APPLY PESTICIDES

1. Remove or cover water containers and food sources in area.
2. Read chemical labels completely.
3. Observe all safely precautions for pesticide.
4. Put on protective clothing before mixing chemical.
5. Partially fill sprayer with water.
6. Determine amount of pesticide needed
7. Determine compatibility of mixing chemicals.
8. Add chemical to sprayer, carefully following label directions. (if using a WP, make a slurry before adding to sprayer)
9. Add surfactant, if applicable.
10. Add water until sprayer is full.
11. Thoroughly mix solution.
12. Determine starting point and direction of travel.
13. Hand sprayer
    a. pressurize sprayer with tank pump
    b. adjust nozzle for desired coverage
    c. spray affected area in a uniform pattern
14. Tractor-mounted sprayer
    a. start movement of tractor and oper sprayer(s)
    b. maintain constant ground speed until area is covered
15. Clean equipment after use.
16. Thoroughly cleanse exposed skin areas with soap and water.

Gardening-Groundskeeping Unit: PESTICIDES

Competency Task: APPLY PESTICIDES TO DISEASED OR INSECT INFESTED PLANTS

Performance Objective	Learning Activities	Evaluation	Resources
Given plants infested with either chewing or sucking insects, apply a chemical which will kill the identified insects. For satisfactory performance, the plant growth must not be retarded by the chemical treatment, the chemical used must not be allowed to come in prolonged contact with skin, drift to animals, food sources, or water sources, and application must meet instructor approval.	1) Read appropriate selections from Master Resource List	1) Notes	Selections from Master Resource List **ILLINOIS** 1108-1.1 'Understanding and Safe Use of Pesticides' (slidefilm/slideset) 1108-1.2 'Selecting and Handling Pesticides' (slidefilm/slideset) 4045a 'Handling and Using Pesticides Safely' (subject-matter unit) **GEORGIA** 'Applying Pesticides' (subject-matter unit) **KENTUCKY** GG-70 'Applying Chemicals to Diseased Plants' (module) **OKLAHOMA** 'Principles of Pesticide Use, Handling, and Application' (teacher guide/student manual) Groundskeeper Performance Guide
	2) View filmstrips/slides	2) Notes	
	3) Read subject-matter units	3) Notes	
	4) Group discussion - preventative vs. curative spray programs	4) Participation	
	5) Demonstration - groundskeeper/instructor	5) Attendance	
	6) Complete Performance Objective	6) Performance guide/ Instructor Approval	

1. Determine required chemical, using diagnostic chart which shows type of chemical to be used with given plants.

2. Read manufacturer's instructions for using chemical.

3. Put on protective clothing before using chemical.

4. Mix chemical according to directions, if required.

5. Determine equipment to use in application of chemical.

6. Spray plants, using manufacturer's instructions for operating sprayer. Cover all pests, and upper and lower leaf surfaces.

7. Clean all equipment with water.

8. Thoroughly cleanse exposed skin areas with soap and water.

Gardening-Groundskeeping Unit: PESTICIDES

Competency Task: APPLY HERBICIDES

Performance Objective

Given a lawn with specific kinds of weeds, apply a weed killing compound over all areas of the lawn. For satisfactory performance, permanent grasses and plants must not be damaged by the chemical, uniform coverage must be evident by dead or dying weeds, and application must meet instructor approval.

Learning Activities	Evaluation
1) Read appropriate selections from Master Resource List	1) Notes
2) View filmstrips/slides	2) Notes
3) Read subject-matter units	3) Notes
4) Group discussion - herbicides, selective-non-selective	4) Participation
5) Review commercial herbicide catalogues	5) Notes
6) Demonstration - groundskeeper/instructor	6) Attendance
7) Complete Performance Objective	7) Performance Guide/ Instructor Approval

Resources

Selections from Master Resource List

ILLINOIS

1108-1.3 'Calibrating and Applying Pesticides Safely' (slidefilm/slideset)

'How Herbicides Work' (transparencies)

'Weed Control' (transparencies)

KENTUCKY

GG-71 'Weed Killing Compounds' (module)

OHIO

'Weed Control, Cultural and Chemical' (manual)

WISCONSIN

118 'Controlling Lawn Weeds' (bulletin)

Herbicide catalogues

Groundskeeper

Performance Guide

1. Determine kinds of weeds. Determine required chemical, using deagnostic charts which show type of chemical to be used with given weeds.
2. Read chemical label to determine proper use of chemical.
3. Mix chemical, if required.
4. Prepare applicator for application of chemical.
5. Cover area following directions for rate of application.
6. Dispose of excess chemical according to directions, if necessary.
7. Clean application
8. Return to storage.

Maintenance of Facilities

- Clean Grounds of Leaves and Litter, *page 129*
- Dispose of Prunings, *page 131*
- Repair Irrigation Lines and Spray Components, *page 133*
- Maintain Pools and Fountains, *page 135*
- Repair Driveways and Streets, *page 137*
- Sweep Streets or Parking Lots, *page 139*
- Apply Salt to Icey Sidewalks and Streets, *page 141*

Maintenance of Facilities

Gardening-Groundskeeping Unit: MAINTENANCE OF FACILITIES

Competency Task: CLEAN GROUNDS OF LEAVES AND LITTER

Performance Objective	Learning Activities	Evaluation	Resource
Given a lawn area littered with leaves and paper, and the necessary tools, remove the leaves and litter from the area. For satisfactory performance, grounds cleaning must follow performance guide outline and meet instructor approval.	1) Read appropriate selections from Master Resource List	1) Notes	Selections Resource
	2) Read subject-matter units	2) Notes	KENTUCKY GG-46 'Cle Leav
	3) Group discussion - why grounds must be kept clean (attitude)	3) Participation	Groundskee
	4) Demonstration - groundskeeper/instructor	4) Attendance	Performanc
	5) Complete Performance Objective	5) Performance Guide/ Instructor Approval	

1. Remove paper and other synthetic debris and deposit in container.
2. Sweep leaves and remaining debris into small piles using a leaf broom.
3. Place piled leaves into disposable bags or other suitable containers.
4. Remove containers to appropriate locations.

Gardening-Groundskeeping Unit: MAINTENANCE OF FACILITIES

Competency Task: DISPOSE OF PRUNINGS

Performance Objective	Learning Activities	Evaluation	Resources
Given a power chipper and operator's manual, dispose of a stack of prunings. For satisfactory performance, no prunings or wood debris should remain on the ground area, safety regulations should be followed, and chipping must meet instructor approval.	1) Read appropriate selections from Master Resource List	1) Notes	Selections from Master Resource List Operator's Manual Groundskeeper Performance Guide
	2) Group discussion - operating power chipper and safety precautions	2) Participation	
	3) Demonstration - groundskeeper/instructor	3) Attendance	
	4) Complete Performance Objective	4) Performance Guide/ Instructor Approval	

1. Position chipper by stack of prunings.
2. Perform necessary service to equipment as indicated in operator's manual.
3. Read operator's manual for equipment operating and safety instructions.
4. Start chipper power unit.
5. Feed prunings into chipper carefully, observing safety rules.
6. Dispose of chips as mulch in a shrub or plant area, storage pile, etc.

Gardening-Groundskeeping Unit: MAINTENANCE OF FACILITIES

Competency Task: REPAIR IRRIGATION LINES AND SPRAY COMPONENTS

Performance Objective	Learning Activities	Evaluation	Resources
Given plumbing tools, and other necessary equipment, remove obstructions in irrigation lines and spray components. For satisfactory performance, the irrigation system must not leak, water must flow through the lines and spray components at a normal rate, and repairs must meet instructor approval.	1) Read appropriate selections from Master Resource List	1) Notes	Selections from Master Resource List ILLINOIS 632 'Water Features, Irrigation Materials' (slidefilm/slideset) KENTUCKY GG-47 'Servicing Irrigation Systems' (module) Irrigation System Manual Groundskeeper Performance Guide
	2) View filmstrips/slides	2) Notes	
	3) Read subject-matter units	3) Notes	
	4) Group discussion - specific irrigation systems/components	4) Participation	
	5) Demonstration - groundskeeper/instructor	5) Attendance	
	6) Complete Performance Objective	6) Performance Guide/ Instructor Approval	

1. Test system to find the diagnose problems.

2. Check pop-up head for operation. Disassemble, clean heads with directed water.

3. Remove obstructions from supply lines with water pressure or remove section of pipe (PVC).

4. Replace water supply lines, if necessary.

5. Repair or replace leaking cut-off valves.

Gardening-Groundskeeping Unit: MAINTENANCE OF FACILITIES

Competency Task: MAINTAIN POOLS AND FOUNTAINS

Performance Objective	Learning Activities	Evaluation	Resources
Given access to cleaning tools and supplies, clean a concrete-based ornamental pool. For satisfactory performance, the fresh water placed in the pool must not develop a surface film, no debris should be visible on the pool bottom, and cleaning must meet instructor approval.	1) Read appropriate selections from Master Resource List	1) Notes	Selections from Master Resource List KENTUCKY GG-42 'Cleaning Ornamental Pools' (module) Pool Chemical Manufacturer's Information Groundskeeper Performance Guide
	2) Read subject-matter units	2) Notes	
	3) Group discussion - pool cleaning process, supplies needed	3) Participation	
	4) Demonstration - groundskeeper/instructor	4) Attendance	
	5) Complete Performance Objective	5) Performance Guide/ Instructor Approval	

1. Drain water from pool.
2. Put on rubber gloves.
3. Clean pool recesses, drain and superstructure, as necessary, using water-detergent solution.
4. Fill pool with water.
5. Add algacide and chlorine as recommended to prevent growth of algae.

Gardening-Groundskeeping Unit: MAINTENANCE OF FACILITIES

Competency Task: REPAIR DRIVEWAYS AND STREETS

Performance Objective	Learning Activities	Evaluation	Resources
Given a shovel, tamp, and cold or hot-mix asphalt, repair a pothole in as asphalt street or driveway. For satisfactory performance, the asphalt must be contoured slightly higher than the roadway and compacted so that it will support an automobile without altering or losing its contour, and meet instructor approval.	1) Read appropriate selections from Master Resource List	1) Notes	Selections from Master Resource List
	2) Read subject-matter unit	2) Notes	KENTUCKY GG-39 'Repairing Asphalt and Concrete Surfaces' (module)
	3) Group discussion - cold and hot mix asphalt application	3) Participation	Groundskeeper
	4) Demonstration - groundskeeper/instructor	4) Attendance	Performance Guide
	5) Complete Performance Objective	5) Performance Guide/ Instructor Approval	

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1. Locate sunken areas or potholes.
2. Remove broken asphalt or other faulty base material from roadbed.
3. Place new dirt (clay mixture) in roadbed and compact in 6" layers. Compact to within 8" of roadway surface.
4. Pour ready-mix concrete to within 2" of roadway surface and let set for 3 days.
5. Pour ready-mix hot or-cold-mix asphalt over concrete.
6. Compact and smooth asphalt with a contour slightly highter than the roadway.

Gardening-Groundskeeping Unit: MAINTENANCE OF FACILITIES

Competency Task: SWEEP STREETS OR PARKING LOTS

Performance Objective	Learning Activities	Evaluation	Resources
Given an industrial sweeping machine and operator's manual, sweep a parking lot clean. For satisfactory performance, sweeping must follow performance guide outline, operator's manual, and meet instructor's approval.	1) Read appropriate selections from Master Resource List	1) Notes	Selections from Master Resource List KENTUCKY GG-40 'Cleaning Streets' (module) Operator's Manual Groundskeeper Performance Guide
	2) Read subject-matter units	2) Notes	
	3) Group discussion - sweeper use	3) Participation	
	4) Demonstration - groundskeeper/instructor	4) Attendance	
	5) Complete Performance Objective	5) Performance Guide/ Instructor Approval	

1. Check manual for operating instructions.
2. Plan to sweep when no traffic, or redirect traffic from area.
3. Adjust sweeping brooms for streets, curbs, corners.
4. Start brooms in motion.
5. Move machine to curb side of parking lot.
6. Observe mirror on machine and guage side broom for sweeping along curb.
7. Turn on water sprayer to prevent excessive dust.
8. Sweep lot, observing proper rate of speed required for removing all debris, rocks, and dirt.
9. When stopping machine lift broom from pavements.

Gardening-Groundskeeping Unit: MAINTENANCE OF FACILITIES

Competency Task: APPLY SALT TO ICEY SIDEWALKS AND STREETS

Performance Objective	Learning Activities	Evaluation	Resources
Given hand or mechanical spreaders, icey sidewalks and streets, remove ice, snow, or slush from sidewalks and streets using salt. For satisfactory performance, coverage should be uniform, salt will be applied so it removes ice, does not harm ornamental plants, and meets instructor approval.	1) Read appropriate selections from Master Resource List	1) Notes	Selections from Master Resource List KENTUCKY GG-41 'Applying Salt to Icey Areas' (module) Groundskeeper Performance Guide
	2) Read subject-matter units	2) Notes	
	3) Group discussion - snow/ice removal materials, salt damage to ornamental plant materials	3) Participation	
	4) Demonstration - groundskeeper/instructor	4) Attendance	
	5) Complete Performance Objective	5) Performance Guide/ Instructor Approval	

Performance Guide

APPLY SALT TO ICY SIDEWALKS OR STREETS

1. Load salt bucket or mechanical spreader.
2. Spread salt evenly over area-don't over apply salt or place in a high vegetative area.
3. Add additional salt as required.
4. Clean bucket or spreader thoroughly after use.
5. Sweep excess water off sidewalks as ice, snow, or slush, melts.

Management—Job Actions

- Plan Security Programs, *page 143*
- Establish Safety Regulations, *page 145*
- Establish Performance Standards, *page 147*
- Develop Work Methods, *page 150*
- Improve Work Methods, *page 152*
- Develop Priority Schedules for Groundskeeping Tasks, *page 155*
- Determine Personnel Requirements, *page 157*
- Assign Tasks to Groundskeeping Crews, *page 158*
- Direct Inspection Activities, *page 160*
- Assess Performed Activities, *page 162*

Management—Job Actions

Gardening-Groundskeeping Unit: MANAGEMENT - JOB ACTIONS

Competency Task: PLAN SECURITY PROGRAMS

Performance Objective	Learning Activities	Evaluation	Resources
Given information from the instructor about a given grounds area, building or compound, list seven possible security procedures that could provide protection for the grounds area. For satisfactory performance, each of the 7 security procedures listed, must correspond with those listed in the instructor checklist.	1) Read appropriate selections from Master Resource List	1) Notes	Selections from Master Resource List Police Officer School and Industry Instructor Checklist
	2) Group discussion - with local police officer, security programs	2) Participation	
	3) Group/Independent Project - school and local industry practices	3) Notes/Report findings	
	4) Complete Performance Objective	4) Instructor Checklist	

ACCEPTABLE

1. Personal identification system.
2. Gate or door checks.
3. Lighting
4. Structural restraints
5. Periodic police checks
6. Electronic alarm and surveillance equipment.
7. Human and/or canine patrols.

Gardening-Groundskeeping Unit: MANAGEMENT - JOB ACTIONS

Competency Task: ESTABLISH SAFETY REGULATIONS

Performance Objective	Learning Activities	Evaluation	Resources
Given the manufacturer's manual, superintendent's criteria for mowing, and a description of a task to be performed, develop a list of 5 safety regulations for using a nine-gang self-propelled, reel-type mower under the conditions described. For satisfactory performance, each of the 5 safety regulations must meet instructor approval.	1) Read appropriate selections from Master Resource List	1) Notes	Selections from Master Resource List ILLINOIS 498 'Using Power Lawn Mowers Safely' (slidefilm) NEW YORK 01.0599-01 'Operation and Maintenance of Horticultural Equipment' (module) Manufacturer's Manual Groundskeeper Performance Guide
	2) View filmstrips/slides	2) Notes	
	3) Read subject-matter units	3) Notes	
	4) Read manufacturer's manual	4) Notes	
	5) Demonstration - groundskeeper/instructor	5) Attendance	
	6) Complete Performance Objective	6) Performance Guide/ Instructor Approval	

Performance Guide

ESTABLISH SAFETY REGUALTIONS

1. Stress personal safety.
2. Consider mowing plan.
3. Consider equipment safety.
4. Read manufacturer's manual.
5. List five safety regulations for equipment under instructor-(designated) conditions.
6. Submit to instructor for check against manufacturer's manual.

Gardening-Groundskeeping Unit: MANAGEMENT - JOB ACTIONS

Competency Task: ESTABLISH PERFORMANCE STANDARDS

Performance Objective	Learning Activities	Evaluation	Resources
Given a task to treat a fungus infection on a shrub and pesticide manufacturer's specifications, list in writing three performance standards for applying a pesticide to the fungus infection. For satisfactory performance, each of the three performance standards must follow the performance guide outline and meet instructor approval.	1) Read appropriate selections from Master Resource List	1) Notes	Selections from Master Resource List ILLINOIS 1108-1.1 'Understanding and Safe Use of Pesticides' (slidefilm/slideset) 1108-1.2 'Selecting & Handling Pesticides' (slidefilm/slideset) 1108-1.3 'Calibrating & Applying Pesticides Safely' (slidefilm/slideset) 4045a 'Handling & Using Pesticides Safely' (subject-matter unit) CALIFORNIA 'Controlling Pests of Ornamental Plants' (filmstrip_ GEORGIA 'Insects & Diseases of Ornamentals - How to Control Them' (subject-matter unit) 'Applying Pesticides' (manual)
	2) View filmstrips/slides	2) Notes	
	3) Read subject-matter units	3) Notes	
	4) Group discussion - procedures/considerations used when developing performance standards	4) Participation	
	5) Demonstration - groundskeeper/instructor	5) Attendance	
	6) Complete Performance Objective	6) Performance Guide/ Instructor Approval	

Gardening-Groundskeeping Unit: MANAGEMENT - JOB ACTIONS

Competency Task: ESTABLISH PERFORMANCE STANDARDS - 2

Performance Objective	Learning Activities	Evaluation	Resources
			KENTUCKY GG-72 'Applying Chemicals to Diseased Plants' (module) MICHIGAN 'Controlling Pests of Trees and Shrubs' (bulletin) OKLAHOMA 'Principles of Pesticide Use, Handling, and Application' (teacher guide/student manual) Manufacturer's Instructions Groundskeeper Performance Guide

Performance Guide

1. Identification of:
   a. Shrub
   b. Type of fungus infection.
2. Recommendation of pesticide treatment.
3. Method of application.
4. Results of pesticide application.
5. Safety considerations-State/EPA licensing, standards.
6. Insturctor review.

Gardening-Groundskeeping Unit: MANAGEMENT - JOB ACTIONS

Competency Task: DEVELOP WORK METHODS

Performance Objective	Learning Activities	Evaluation	Resources
Given a description of a groundskeeping task and the usual way it is performed, develop an alternate plan for performing the task to reduce costs without loss of safety procedures or quality of work. For satisfactory performance, work methods and procedures must follow the performance guide outline and meet instructor approval.	1) Read appropriate selections from Master Resource List 2) Read subject-matter units 3) Complete Performance Objective	1) Notes 2) Notes 3) Performance Guide/ Instructor Approval	Selections from Master Resource List ILLINOIS 6004 'Agricultural Business Procedures' (subject-matter unit) 6006 'Simplifying Work in an Agricultural Business' (subject-matter unit) Performance Guide

1. State problem associated with old methods.
2. State causes of problems.
3. Develop new plan or procedure for improving task performance.
4. Test new plant or procedure and compare safety, costs, and quality of work with old method.
5. Revise new plan, as necessary.
6. Implement new plan.
7. Consider suggestions by crew leaders/foremen.
8. Submit for instructor approval.

Gardening-Groundskeeping Unit: MANAGEMENT - JOB ACTIONS

Competency Task: IMPROVE WORK METHODS

Performance Objective

Given a groundskeeper mowing a lawn area, observe completion of the task and develop a list of recommendations for improving his work and safety methods. For satisfactory performance, all improved methods and procedures must follow the performance guide outline and each item in the instructor checklist must be rated 'acceptable'.

Learning Activities	Evaluation
1) Read appropriate selections from Master Resource List	1) Notes
2) View filmstrips/slides	2) Notes
3) Read subject-matter units	3) Notes
4) Role play - discussing improved work methods tactfully with groundskeeper	4) Participation
5) Demonstration - groundskeeper/instructor	5) Attendance
6) Complete Performance Objective	6) Performance Guide/ Instructor Checklist

Resources

Selections from Master Resource List

ILLINOIS

651 'Steps to a Better Lawn' (slidefilm/slideset)

KENTUCKY

GG-54 'Mowing Grass' (module)

Groundskeeper

Performance Guide

Instructor Checklist

Performance Guide IMPROVE WORK METHODS

1. Discuss problems of mowing methods with grounds employee tactfully.
2. State proper and safe mowing methods.
3. Explain advantage of proper and safe mowing methods.

ACCEPTABLE

1. Improved work method recommendations based upon:
    - a. Lawn appearance and condition.
    - b. Safety conditions.
    - c. Reduce work time.
    - d. Consume less fuel or energy.
    - e. Consume less effort.
    - f. Equipment care.
    - g. Reduce air and noise pollution.
2. Improved work method recommendations were discussed and presented tactfully.

Gardening-Groundskeeping Unit: MANAGEMENT - JOB ACTIONS

Competency Task: DEVELOP PRIORITY SCHEDULES FOR COMPLETING GROUNDSKEEPING TASKS

Performance Objective	Learning Activities	Evaluation	Resources
Given a description of tasks to be performed during one week and a prepared schedule form, develop a priority schedule for completing these groundskeeping tasks. For satisfactory performance, the schedule must follow the performance guide outline and meet instructor approval.	1) Read appropriate selections from Master Resource List	1) Notes	Selections from Master Resource List Groundskeeper Performance Guide
	2) Group discussion - scheduling tasks, alternative tasks for poor weather conditions	2) Participation	
	3) Demonstration - groundskeeper/instructor	3) Attendance	
	4) Complete Performance Objective	4) Performance Guide/ Instructor Approval	

Performance Guide DEVELOP PRIORITY SCHEDULES FOR COMPLETING GROUNDSKEEPING TASKS.

1. Review tasks to be performed.
2. Review schedule form.
3. Place tasks in order of priority, indicating alternatives in case of negative weather conditions.
4. Indicate person responsible for performing each task.
5. Indicate date of performance of each task.
6. Present schedule to instructor for review.
7. Revise schedule, if necessary.

Gardening-Groundskeeping Unit: MANAGEMENT - JOB ACTIONS

Competency Task: DETERMINE PERSONNEL REQUIREMENTS FOR GROUNDSKEEPING

Performance Objective	Learning Activities	Evaluation	Resources
Given that it takes one person 2 hours to mow an area 25' × 75', using a 24" rotary push mower, determine how long it will take 3 people to mow an area twice this size using the same equipment. For satisfactory performance, the mathematical problem must be 100 percent accurate and meet instructor approval.	1) Read appropriate selections from Master Resource List	1) Notes	Selections from Master Resource List ILLINOIS
	2) Group discussion - personnel requirements- estimating ability, knowledge of employees' abilities, quality of work desired, equipment to be used	2) Participation	6015 'Using Arithmetic in Agriculture' (subject-matter unit) 6016 'Motivating Workers in an Agricultural Business' (subject-matter unit)
	3) Read subject-matter units	3) Notes	Mathematics Textbooks
	4) Demonstration - groundskeeper/instructor	4) Attendance	Groundskeeper
	5) Complete Performance Objective	5) Instructor Approval	

Gardening-Groundskeeping Unit: MANAGEMENT - JOB ACTIONS

Competency Task: ASSIGN TASKS TO GROUNDSKEEPING CREWS

Performance Objective	Learning Activities	Evaluation	Resources
Given three groundskeeping workers, a bluegrass lawn area, and three 24" rotary push mowers, assign each worker a portion of the lawn area to mow. For satisfactory performance, each worker must be able to repeat his assigned task and demonstrate correct methods and procedures in completing the task.	1) Read appropriate selections from Master Resource List	1) Notes	Selections from Master Resource List ILLINOIS 498 'Using Power Lawn Mowers Safely' (slidefilm) 651 'Steps to a Better Lawn' (slidefilm/slideset) KENTUCKY GG-54 'Mowing Grass' (module) NEW YORK 01.0506-01 'Growing and Caring for Turfgrass' (module) OHIO 'Lawn Care and Management' (slideset) 'Turf Management' (manual) Groundskeeper Performance Guide
	2) View filmstrips/slides	2) Notes	
	3) Read subject-matter units	3) Notes	
	4) Role play - situation of assigning tasks	4) Participation	
	5) Demonstration - groundskeeper/instructor	5) Attendance	
	6) Complete Performance Objective	6) Performance Guide/ Instructor Approval	

1. Assign lawn-mowing equipment to each worker.
2. Designate lawn areas to be mowed by each worker.
3. Instruct workers in methods and procedures to be followed in mowing lawn areas at uniform height, and without damaging surrounding trees and ornamental plants.
4. Each worker must be able to repeat orally the assigned task and procedures to be used in completing the task.

Gardening-Groundskeeping Unit: MANAGEMENT - JOB ACTIONS

Competency Task: DIRECT INSPECTION ACTIVITIES

Performance Objective	Learning Activities	Evaluation	Resources
Given a gardening task of planting annual flowers, develop a list of inspection points to evaluate work performed. For satisfactory performance, at least 5 of the inspection points must correspond with those listed in the instructor checklist.	1) Read appropriate selections from Master Resource List	1) Notes	Selections from Master Resource List KENTUCKY
	2) View filmstrips/slides	2) Notes	GG-36 'Constructing Portable Shading Devices' (module)
	3) Read subject-matter units	3) Notes	
	4) Group discussion - evaluation considerations	4) Participation	GG-50 'Planting and Mulching Flowers and Bulbs' (module)
	5) Demonstration - groundskeeper/instructor	5) Attendance	GG-51 'Watering Plants' (module) OHIO
	6) Complete Performance Objective	6) Performance Guide/ Instructor Checklist	'Annuals' (slideset and script) Groundskeeper Performance Guide Instructor Checklist

ACCEPTABLE

1. Soil samples were taken and tested before planting.
2. Soil has proper moisture and growth stimulants.
3. Soil amendments were used as needed.
4. Plants were identified and planting schedule was determined.
5. Proper planting depth was used.
6. Planting hole was large to accommodate plant roots.
7. Plants were spaced properly.

Gardening-Groundskeeping Unit: MANAGEMENT - JOB ACTIONS

Competency Task: ASSESS PERFORMED ACTIVITIES

Performance Objective	Learning Activities	Evaluation	Resources
Given the time sheets for four persons and information about the job activities of each during a specified period (instructor-prepared situation), list a minimum of 5 factors to be considered when analyzing each person's work load during the designated period. For satisfactory performance, each of the 5 factors listed must correspond with those in the instructor checklist.	1) Read appropriate selections from Master Resource List	1) Notes	Selections from Master Resource List Groundskeeper Instructor Checklist
	2) Group discussion - work assessment procedures and considerations	2) Participation	
	3) Demonstration - groundskeeper/instructor	3) Attendance	
	4) Complete Performance Objective	4) Instructor Checklist	

ACCEPTABLE

1. Title of each duty
2. Approximate time spent on each duty.
3. Number of hours worked.
4. Number of duties performed.
5. Rating of difficulty of each duty performed.
6. Number of assistants on each duty.
7. Evaluation of each completed duty.

Management—Personnel

- Develop Rules and Regulations, *page 164*
- Write Job Descriptions for Groundskeepers, *page 166*
- Recruit Employees, *page 168*
- Interview and Select Employees, *page 170*
- Evaluate Employees Performance, *page 172*
- Counsel Employees About Absenteeism, *page 174*
- Schedule Employee Leaves and Vacations, *page 176*
- Evaluate Suggestions, *page 178*
- Evaluate Complaints, *page 180*
- Plan Staff Meetings, *page 182*
- Conduct Staff Meetings, *page 184*
- Promote Employees, *page 186*
- Terminate Employees, *page 188*

Management—Personnel

Gardening-Groundskeeping Unit: MANAGEMENT - PERSONNEL

Competency Task: DEVELOP RULES AND REGULATIONS

Performance Objective	Learning Activities	Evaluation	Resources
After completing a conference on policies and regulations, develop 20 rules normally included in personnel policies. For satisfactory performance, the 20 rules listed must correspond with those listed in the instructor checklist.	1) Read appropriate selections from Master Resource List	1) Notes	Selections from Master Resource List
	2) Read subject-matter units	2) Notes	ILLINOIS 6003 'Human Relations in an Agricultural Business' (subject-matter unit)
	3) Group discussion - development and necessity of rules and regulations	3) Participation	6016 'Motivating Workers in an Agricultural Business' (subject-matter unit)
	4) Complete Performance Objective	4) Instructor Checklist	School Director of Personnel Instructor Checklist

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Instructor Checklist

DEVELOP RULES AND REGULATIONS

ACCEPTABLE

1. Parking
2. Personal conduct
3. Personal property
4. Telephone calls
5. Bulletin Board
6. Solicitation
7. Complaints
8. Wages & compensation
9. Overtime
10. Raises
11. Leave of absence
12. Vacation
13. Holidays
14. Jury duty
15. Absenteeism
16. Restroom facilities
17. Breaks & lunch periods
18. Insurance
19. Accidents
20. First aid
21. Tools & equipment
22. Safety
23. Health
24. Dress

Gardening-Groundskeeping Unit: MANAGEMENT - PERSONNEL

Competency Task: WRITE JOB DESCRIPTIONS FOR GROUNDSKEEPERS

Performance Objective	Learning Activities	Evaluation	Resources
Given a description of grounds and equipment, write a job description for an entry-level groundskeeper employed by a school, hospital or industry. For satisfactory performance, the job description must include a description of each duty listed in the instructor checklist.	1) Read appropriate selections from Master Resource List	1) Notes	Selections from Master Resource List Want-Ads in Professional Periodicals Instructor Checklist
	2) Group discussion - groundskeeping job titles and corresponding duties	2) Participation	
	3) Group/Independent Project - practice writing groundskeeping job descriptions	3) Notes/Job descriptions	
	4) Complete Performance Objective	4) Instructor Checklist	

Instructor Checklist WRITE JOB DESCRIBTION FOR GROUNDSKEEPING

ACCEPTABLE

1. Maintenance of plants.
2. Replacement of plants.
3. Soil preparation and improvement.
4. Maintenance of facilities.
5. Operation of equipment.
6. Maintenance of equipment.
7. Minimum education required.

Gardening-Groundskeeping Unit: MANAGEMENT - PERSONNEL

Competency Task: RECRUIT EMPLOYEES

Performance Objective	Learning Activities	Evaluation	Resources
Given a need for additional workers, list 10 methods or sources that may be used to locate needed personnel. For satisfactory performance, each of the 10 items listed must match those given in the instructor checklist.	1) Read appropriate selections from Master Resource List	1) Notes	Selections from Master Resource List **ILLINOIS** 6004 'Agricultural Business Procedures' (subject-matter unit) 6001a 'Applying for a Job' (subject-matter unit) **KENTUCKY** GG-00 'Introduction to Gardenin Groundskeeping' (module) Classified advertisements Instructor Checklist
	2) View filmstrips/slides	2) Notes	
	3) Read subject-matter units	3) Notes	
	4) Group discussion - methods and sources available to locate personnel	4) Participation	
	5) Group/Independent Project - research available local personnel sources	5) Notes/Report findings	
	6) Group/Independent Project - practice writing concise newspaper employment advertisements	6) Notes/Newspaper ads	
	7) Complete Performance Objective	7) Instructor Checklist	

Instructor Checklist RECRUIT EMPLOYEES

ACCEPTABLE

1. Field applications
2. Verbal communication to existing workers
3. Employment service.
4. Radio.
5. Television.
6. Newspapers.
7. Verbal communication in the community.
8. Similar gardening agencies.
9. Employment agencies.
10. Posted signs.
11. Co-Operative Extension Service Personnel.
12. Junior/Community College Hort. Departments.
13. Area career/vocational Hort. departments and instructors.

Gardening-Groundskeeping Unit: MANAGEMENT - PERSONNEL

Competency Task: INTERVIEW AND SELECT EMPLOYEES

Performance Objective	Learning Activities	Evaluation	Resources
Given an entry-level job opening and a job description, determine which one of three applicants is best qualified for the position. Each applicant will be supplied with a description of the job and asked questions 'in private' which are directly related to the job. Select one applicant upon the basis of interest in the job, record of directly related work experience , punctuality, and work/school attendance record. You may use applications, interviews, and the job descriptions to make your decision.	1) Read appropriate selections from Master Resource List	1) Notes	Selections from Master Resource List ILLINOIS
	2) Read subject-matter units	2) Notes	6001a 'Applying for a Job' (subject-matter unit)
	3) Group discussion - interviewing and selecting employees, privacy laws, equal opportunity laws	3) Participation	6003 'Human Relations in Agricultural Businesses' (subject-matter unit)
	4) Role play - interview situation with tape recorder	4) Participation	School Director of Personnel Representative from Local Employment Agency
	5) Complete Performance Objective	5) Performance Guide/ Instructor Approval	Performance Guide

1. Review work to be performed.

2. Review prospective employees' applications.

3. Discuss prospective employees' work experience with former employees.

4. Call each prospective employee for private conference.

5. Tape record interview session.

6. Interview each prospective employee:

    a. Discuss reason for applicant wanting this job.
    b. Discuss past work experience of applicant.
    c. Discuss past work school attendance of applicant.
    d. Describe job opening and its importance.
    e. Relate job opening to past work experience of applicant.
    f. Describe working conditions of jobs, if appropriate.
    g. Describe fringe benefits, if appropriate.
    h. Describe advancement opportunities, if appropriate.

7. Assess qualifications of each applicant.

8. Select most qualified applicant upon the basis of:
    a. Interest in the job.
    b. Record of directly-related experience.
    c. Record of directly-related training.
    d. Record of past work/school attendance.
    e. Past references.

9. The selection must match that of the instructor for satisfactory performance.

Gardening-Groundskeeping Unit: MANAGEMENT - PERSONNEL

Competency Task: EVALUATE EMPLOYEE PERFORMANCE

Performance Objective	Learning Activities	Evaluation	Resources
Given a completed gardening task, list five questions which should be used in evaluating an employee's performance. For satisfactory performance, questions must correspond with those on the instructor checklist.	1) Read appropriate selections from Master Resource List	1) Notes	Selections from Master Resource List
	2) Read subject-matter units	2) Notes	ILLINOIS 6016 'Motivating Workers in Agricultural Businesses' (subject-matter units)
	3) Group discussion - frequency of employee evaluations - bi-weekly, monthly, yearly	3) Participation	School Director of Personnel
	4) Complete Performance Objective	4) Instructor Checklist	Instructor Checklist

Instructor Checklist

EVALUATE EMPLOYEE PERFORMANCE

ACCEPTABLE

1. Was the task neatly done?
2. Were applicable safety rules observed?
3. Was the task completed in a reasonalbe length of time?
4. Were the proper tools selected and used correctly?
5. Were standard horticultural or goundskeeping practices followed?
6. Was the employee cordial with the public? Able to answer questions or suggest proper sources for answers?

Gardening-Groundskeeping Unit: MANAGEMENT - PERSONNEL

Competency Task: COUNSEL EMPLOYEES ABOUT ABSENTEEISM

Performance Objective	Learning Activities	Evaluation	Resources
Given a groundskeeping employee who has been absent from work without reason, counsel and ask the employee privately not to be absent again without a valid excuse. For satisfactory performance, the counseling should be done in a manner that will not offend the employee and follow the guidelines set in the performance guide.	1) Read appropriate selections from Master Resource List	1) Notes	Selections from Master Resource List
	2) Read subject-matter units	2) Notes	ILLINOIS 6003 'Human Relations in an Agricultural Business' (subject-matter unit)
	3) Group discussion - employee absenteeism, common reasons, handling of situation, tactics for personnel counseling	3) Participation	6016 'Motivating Workers in an Agricultural Business' (subject-matter unit)
	4) Role play - counseling situation with tape recorder	4) Participation	School Director of Personnel
	5) Complete Performance Objective	5) Performance Guide/ Instructor Approval	Performance Guide

Performance Guide

COUNSEL EMPLOYEES ABOUT ABSENTEEISM

1. Analyze employee attendance and performance records.

2. Discuss employee interests and attitudes confidentially with other supervisors.

3. Arrange for private meeting rooms.

4. Call employee for conference.

5. Set stage for informal discussion.
   a. Emphasize importance of teamwork in job.
   b. Review attendance policies.

6. Inquire about reason for absenteeism.

7. Explain what will be accepted as a valid excuse.

8. Explain procedure for getting an excuse.

9. Ask worker to use procedure for all absences.

10. Follow procedures established by county, city, institution, etc., i.e. chronic absenteeism:

    a. Verbal warning
    b. Written warning
    c. Written reprimand
    d. Days off without pay
    e. Fired

11. Counseling procedure must be approved by the instructor for satisfactory performance.

Gardening-Groundskeeping Unit: MANAGEMENT - PERSONNEL

Competency Task: SCHEDULE EMPLOYEE LEAVES AND VACATIONS

Performance Objective	Learning Activities	Evaluation	Resources
Given a roster of nine employees, leave eligigility of each, employee leave requests, and a list of on-going and up-coming tasks, develop a vacation schedule. For satisfactory performance, the schedule must be designed so not more than two of the nine employees are scheduled to be absent during any regular work day, and schedule must meet instructor approval.	1) Read appropriate selections from Master Resource List	1) Notes	Selections from Master Resource List
	2) Group discussion - vacation schedules, considerations, legal holidays	2) Participation	School Director of Personnel
	3) Complete Performance Objective	3) Performance Guide/ Instructor Approval	Performance Guide

1. If work is seasonal, no vacations should be scheduled during peak seasons.
2. Review work in progress and tasks to be performed.
3. Counsel with each employee requesting vacation/holiday leave.
    a. Review leave eligibility and need for vacation/holiday time of each worker.
    b. Discuss tasks to be performed during vacation/holiday period
    c. Determine who will be responsible for performing tasks.
    d. Identify alternate dates for leave, if necessary.
4. Develop vacation/holiday schedule for workers requesting leave.
    a. Identify workers by name.
    b. Identify departure and return dates.
    c. Identify place where workers can be reached during vaction/holiday.
    d. Identify by name worker who will be responsible for performing tasks.
5. Present schedule to instructor for review.
6. Review schedule if necessary.

Gardening-Groundskeeping Unit: MANAGEMENT - PERSONNEL

Competency Task: EVALUATE SUGGESTIONS

Performance Objective	Learning Activities	Evaluation	Resources
Given a suggestion that supposedly will decrease worktime in a given flower and shrub area, develop 6 questions to be used in evaluating the suggestion. For satisfactory performance, each of the 6 questions must correspond with those listed in the instructor checklist.	1) Read appropriate selections from Master Resource List	1) Notes	Selections from Master Resource List
	2) Read subject-matter units	2) Notes	ILLINOIS 6006 'Simplifying Work in an Agricultural Business' (subject-matter unit)
	3) Group discussion - evaluation suggestions, considerations	3) Participation	
	4) Complete Performance Objective	4) Instructor Checklist	School Administrator Instructor Checklist

EVALUATE SUGGESTIONS

ACCEPTABLE

1. Does the suggestion follow a logical sequence?
2. Has it been implemented elsewhere?
3. Is it feasible within existing conditions?
4. Do others agree with the suggestion?
5. Would it detract from the present function of the are?
6. Can it be tried with a minimum of expense?

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Gardening-Groundskeeping Unit: MANAGEMENT - PERSONNEL

Competency Task: EVALUATE COMPLAINTS

Performance Objective	Learning Activities	Evaluation	Resources
Given a job-related complaint from an employee, develop 5 questions to be used in evaluating the complaint. For satisfactory performance, each of the 5 questions must correspond with those listed in the instructor checklist.	1) Read appropriate selections from Master Resource List	1) Notes	Selections from Master Resource List ILLINOIS 6003 'Human Relations in an Agricultural Business' (subject-matter unit) 6006 'Simplifying Work in an Agricultural Business' (subject-matter unit) School Administrator Instructor Checklist
	2) Read subject matter units	2) Notes	
	3) Group discussion - evaluating complaints, considerations	3) Participation	
	4) Role play - one student plays employee with logical complaint, another student acts in management position	4) Participation	
	5) Complete Performance Objective	5) Instructor Checklist	

Instructor Checklist

EVALUATE **COMPLAINTS**

ACCEPTABLE

1. Is complaint based upon fact?
2. Has it been brought up previously by others?
3. Is it possible to change the situation causing complaint?
4. Would a change detract from the present function of the area?
5. Could a change by implemented with a minimum of expense?

Gardening-Groundskeeping Unit: MANAGEMENT - PERSONNEL

Competency Task: PLAN STAFF MEETINGS

Performance Objective	Learning Activities	Evaluation	Resources
After attending sessions providing information on staff meetings, develop a list of sequential steps that should be followed in conducting a meeting of this type. For satisfactory performance, all steps must correspond with those listed in the instructor checklist.	1) Read appropriate selections from Master Resource List 2) Group discussion - planning staff meetings, pre-meeting preparations, meeting agendas 3) Complete Performance Objective	1) Notes 2) Participation 3) Instructor Checklist	Selections from Master Resource List School Adminstrator Instructor Checklist

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Instructor Checklist

PLAN STAFF MEETINGS

ACCEPTABLE

1. Determine need for meeting.
2. Select meeting time.
3. Arrange for meeting space.
4. Select topics.
5. Secure needed equipment.
6. Collect information from staff.
7. Organize information.
8. Present information.
9. Permit time for feedback
10. Evaluate meeting.

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Gardening-Groundskeeping Unit: MANAGEMENT - PERSONNEL

Competency Task: CONDUCT STAFF MEETINGS

Performance Objective	Learning Activities	Evaluation	Resources
Given a landscape maintenance task, conduct a staff meeting to describe work to be completed. For satisfactory performance, the meeting should take no longer than necessary to cover the outline provided in the performance guide, and must meet instructor approval.	1) Read appropriate selections from Master Resource List	1) Notes	Selections from Master Resource List School Administrator Performance Guide
	2) Group discussion - conducting staff meetings, parts of a meeting	2) Participation	
	3) Role play - staff meeting with tape recorder	3) Participation	
	4) Complete Performance Objective	4) Performance Guide/ Instructor Approval	

1. Write information for preforming task.
    - a. Procedures required.
    - b. Finished work standard for judging successful performance.
    - c. Safety precautions.
2. Assign task responsibility to each worker.
3. Present information needed by each worker to complete task.
4. Check worker understanding by asking the workers if they understand the responsibilities for completing the task.

Gardening-Groundskeeping Unit: MANAGEMENT - PERSONNEL

Competency Task: PROMOTE EMPLOYEES

Performance Objective	Learning Activities	Evaluation	Resources
Given a description of the position, develop a minimum of 6 criteria that can serve as a basis for judgement in promoting employees to new or vacant positions. For satisfactory performance, the 6 criteria listed must match those in the instructor checklist.	1) Read appropriate selections from Master Resource List	1) Notes	Selections from Master Resource List ILLINOIS 6003 'Human Relations in Agricultural Businesses' (subject-matter unit) 6016 'Motivating Workers in an Agricultural Business' (subject-matter unit) School Director of Personnel Instructor Checklist
	2) Read subject-matter units	2) Notes	
	3) Group discussion - employee promotions	3) Participation	
	4) Complete Performance Objective	4) Instructor Checklist	

Instructor Checklist

PROMOTE EMPLOYEES

ACCEPTABLE

1. Seniority
2. Experience
3. Past work performance
4. Educational and training
5. Desire for future growth
6. Ability to adapt
7. Ability to get along with others.
8. General attitude

Gardening-Groundskeeping Unit: MANAGEMENT - PERSONNEL

Competency Task: TERMINATE EMPLOYEES

Performance Objective	Learning Activities	Evaluation	Resources
List a minimum of eight possible reasons for terminating an employee. For satisfactory performance, the eight reasons listed must match those in the instructor checklist.	1) Read appropriate selections from Master Resource List	1) Notes	Selections from Master Resource List
	2) Read subject-matter units	2) Notes	ILLINOIS 6003 'Human Relations in an Agricultural Business' (subject-matter unit)
	3) Group discussion - reasons for terminating an employee, dismissal procedures, employment laws	3) Participation	Director of Personnel Local Union Policies
	4) Group/Independent Research - industry practices (company, city, county)	4) Notes/Report findings	Instructor Checklist
	5) Complete Performance Objective	5) Instructor Checklist	

Instructor Checklist TERMINATE EMPLOYEES

ACCEPTABLE

1. Intoxication on the job.
2. Obvious excessive use of drugs.
3. Excessive tardiness.
4. Excessive or unreasonable absences.
5. Poor work performance.
6. Extreme carelessness.
7. Inability or refusal to follow orders.
8. Theft of company or personal property.
9. Deliberate abuse or destruction of equipment.
10. Inciting arguments or violence between fellow workers.
11. Inability to get along with others.
12. Extremely poor attitude toward the job.
14. Extremely poor personal appearance.